

# SUPPLEMENT.

# The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

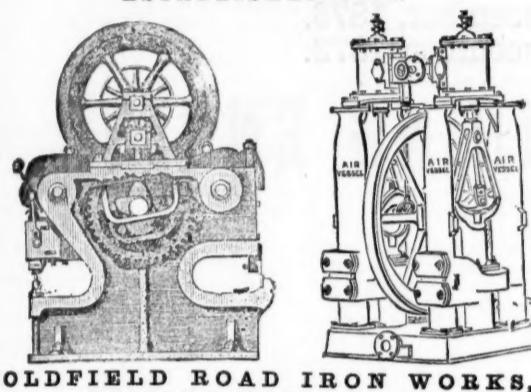
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LONDON, SATURDAY, NOVEMBER 27, 1875.

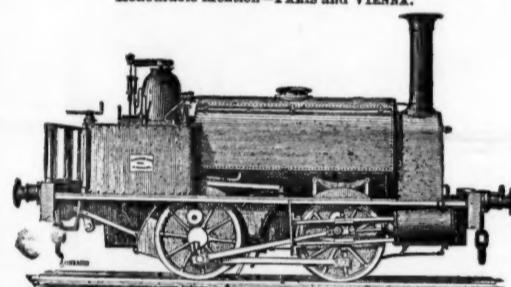
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PATENTEE.

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Will make 10 bolts per minute. Will make 60 nuts per minute.  
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To see the Machines working, apply as above.



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They work with a lower pressure than any other Rock Drill.  
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Without roads and inaccessible to heavy machinery, the Mckean  
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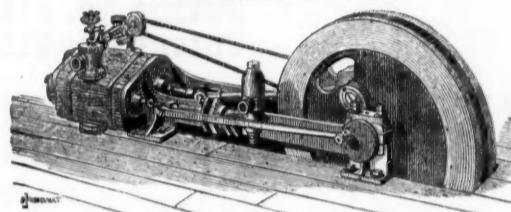
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Wilburn-street, Regent-road  
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NEAR REDRUTH, CORNWALL,

Are now selling Fire Goods of superior quality, manufactured  
from clay which has been subjected to the strongest tests, and  
proved to resist a greater amount of heat than any yet offered  
in the market.

Samples and prices on application at the Works; or of  
Beer, Musgrave, & Co., Merchants  
FALMOUTH.



# THE "KAINOTOMON" ROCK DRILL,

The SIMPLEST, CHEAPEST, and BEST Machine in the World for  
SINKING, MINING, and QUARRYING,



It has been selected by the Admiralty for their works, and is extensively used at the principal Mines, Collieries, and Quarries of Great Britain, and the Continent of Europe.

"To this invention, which appears to possess several advantages over the machines previously exhibited at Falmouth, the Judges are unanimous in awarding a first-class silver medal" (the highest award).—Report of the Judges at the Royal Cornwall Polytechnic Society's Exhibition, 1873.

"The boring machine works splendidly."—W. TORRANCE: *Mid-Calder*.

"For simplicity, compactness, and performance of work, your drill excels all others."—JOHN MAIN: *Crossfield Ironworks*.

"Under the most difficult circumstances, they give every satisfaction."—G. GREY: *Montreal Iron Mines, Cumberland*.

"The simplest and best boring machine."—Capt. WASLEY's letter to the *Mining Journal*, Oct. 18, 1873.

"It gives every satisfaction."—W. E. WALKER: *Lord Leconfield's Iron Mines*.

"The rock-drill I bought of you seven months ago has given me entire satisfaction, and I am convinced that the 'Kainotomon' is the best rock-drill in the market."—P. McGINNIS: *Strabane*.

"I am quite satisfied with the working of it. For sinking pits it is a first-rate invention; I can do as much boring with it myself as six men can do by hand."—S. JENKINS: *Abertillery*.



The advantages over other Rock-boring Machines claimed for the "Kainotomon" are—

- 1.—It is much shorter.
- 2.—It is much lighter, and more readily removed from place to place.
- 3.—It requires the turning of ONLY ONE, instead of a number, of set screws, to fix it in position at any angle.
- 4.—It may be fed 3 inches out of stroke, without stopping the working of the drill, an invaluable advantage.
- 5.—It is not liable to derangement.
- 6.—It has not one-third the number of parts in its construction.
- 7.—All stuffing-boxes and parts requiring adjustment are dispensed with.
- 8.—It is so simple in its construction that any ordinary labourer or miner can drive it, simply having to turn on the motive power and feed the drill.
- 9.—The rotation is compulsory, and regular.
- 10.—40 lbs. pressure only is required to work it.
- 11.—A saving of over 50 per cent. in iron and flexible piping.

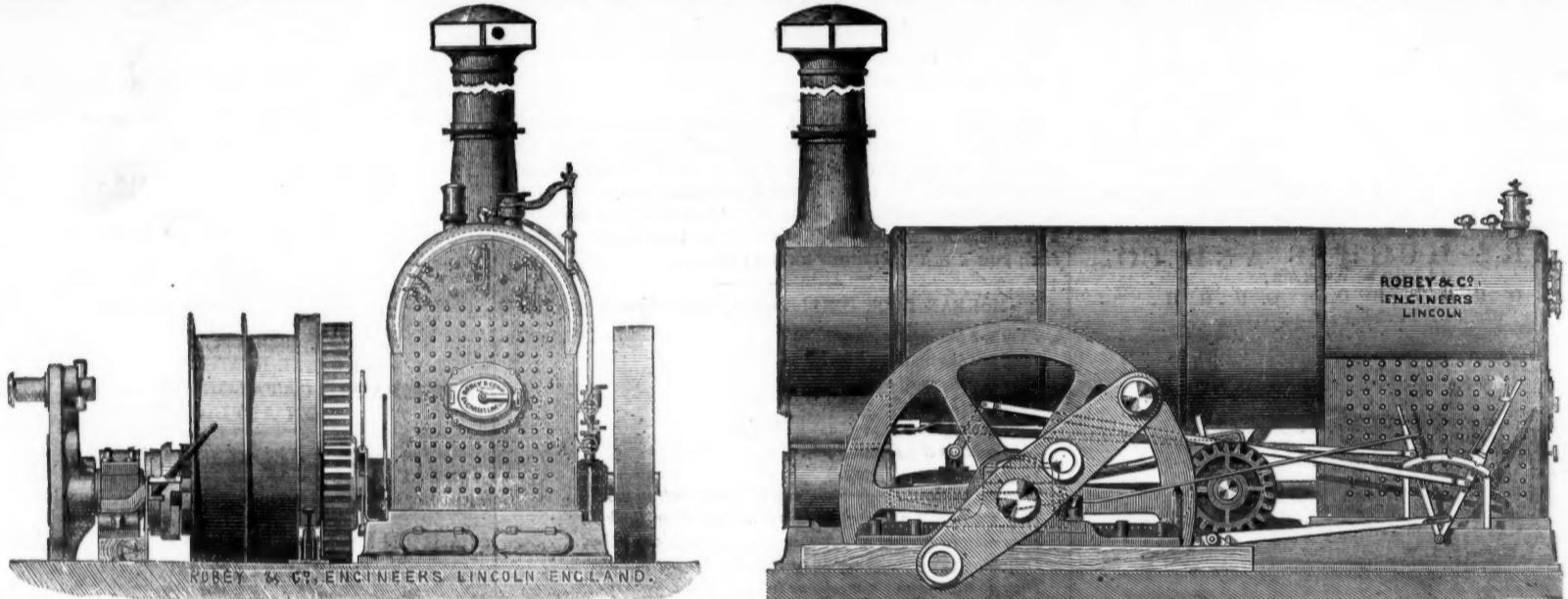
## THE ECONOMIC COAL-CUTTERS, AIR COMPRESSORS, BOILERS, &c.

THOS. A. WARRINGTON, 30, KING STREET, CHEAPSIDE, LONDON, E.C.

Patent No. 4136  
Patent No. 4150

Dated 16th December, 1873.  
Dated 17th December, 1873.

## THE PATENT IMPROVED ROBEY MINING ENGINE.



Some of the advantages of the New Patent Engine are as follows:

- Small first cost.
- Saving of time and expense in erecting.
- Ease, safety, and economy in working.
- Great saving in fuel.

This New Patent Engine is free from all the objections that can be urged against using the old style of Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable, in saving time and expense in fixing.

This New Engine is admirably adapted for driving Flour Mills, Saw Mills, Brick Machines, Pumps, Ore Crushers, Stone Breakers, and all descriptions of Fixed Machinery.

ENGINES UP TO 200 EFFECTIVE HORSE-POWER ALWAYS IN PROGRESS.

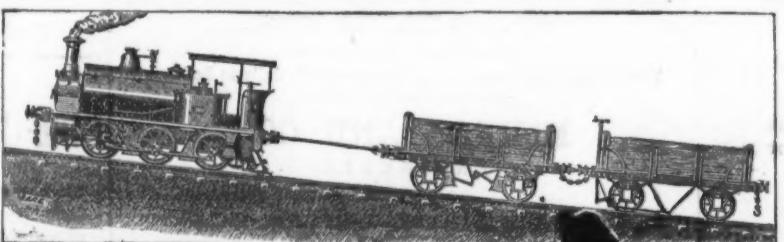
Prices and full particulars on application to the sole manufacturers:—

**ROBEY AND CO., Perseverance Ironworks, Lincoln, England.**

CAUTION.—Notice is hereby given, that any person infringing the above Patents will be forthwith proceeded against.

## HANDYSIDE'S STEEP GRADIENT CO. (LIMITED).

Offices: 9, Victoria-chambers, Victoria-street, S.W., and Atlas Engine Works, near Bristol.



The STEEP GRADIENT COMPANY is prepared to receive Orders for LOCOMOTIVES with the Patent Apparatus attached, and guarantee certain specified Haulage on Gradients, ranging from 1 in 20 to 1 in 10.

No alteration required in the ordinary Section of Rails, and no addition to the Permanent Way, such as Rack or Rail.

Also, the PATENT GRIPPING STRUTT and GRIPPING BRAKE, supplied and fitted to all classes of Railway Carriages or Wagons.

The Company is also prepared to negotiate for the CONSTRUCTION of NEW LINES of RAILWAY, both at Home and Abroad, in accordance with the NEW SYSTEM, which will EFFECT LARGE SAVINGS IN LENGTH, CONSTRUCTION, and subsequent repairs; and is also prepared to negotiate for EXCAVATION WORK of every description.

## Original Correspondence.

## THE BONANZA MINES OF NEVADA.

SIR.—Some anxiety having been expressed since and in consequence of the late disastrous conflagration at Virginia City that the interests of shareholders in the Consolidated Virginia and California Silver Mining Companies had been seriously affected, I beg to inform English mining investors that, according to reliable information just received at this office, the usual monthly dividend of \$10 per share is being paid without interruption by the Consolidated Virginia, notwithstanding the losses which have been necessarily incurred by the two above companies in consequence of the destruction by fire of their hoisting-works and mills. Such fact is to be noted, as it reflects the greatest credit upon the management of the two leading mines of the Pacific States.

J. BERTON,

President of the London and Pacific Coast Mining Bureau.  
Paris Branch of the London and Pacific Coast Land and  
Mining Bureau, 1, Rue Scribe.

## NICKEL, COBALT, CHROMIUM, AND GOLD.

SIR.—I have noticed in the Journal the prospectus of a Nickel, Cobalt, Chromium, and Gold Mine, in New Caledonia. A more attractive title could hardly be penned, and a more respectable array of trustees, directors, &c., could scarcely, perhaps, be found. Besides, nickel, cobalt, and chromium are just now so scarce and dear, and so much in demand, that a mine producing a large quantity of mineral containing an average of 10 per cent. of metallic nickel must be of enormous value, and I hope one has been found by the advertisers. It is not, however, exactly so stated in the prospectus, that the mineral at the mine contains 10 per cent. of metallic nickel, but it is to be easily inferred from the following quotation:—"Ore of a very high average has been discovered *on the surface*, and in very large quantities, and Mr. Kelley reports that about 150 tons, averaging about 10 per cent., is now stacked, which the company will have the option of taking, with any ore on bank at the time of completion of the contract, on paying to the vendors 24/- a ton, being the lowest price offered by the Bank of New Caledonia, Paris, for 5 per cent. ore." An adjoining mine appears to be selling its ore at 3/- 10/- a ton. As to the published assays of the mineral, I notice that "the originals and certified copies, under statutory declaration, may be seen at the company's offices." I notice, also, that one of the many analyses given in the prospectus is of earthy pimelite, and said to be by *Klaproth*, another of harx (*sic*) pimelite, said to be by *Back*. I have never read of mineral called harx pimelite, nor of an analyst of the name of *Back*. But in *Dana's Mineralogy*, page 510, under the head *Pimelite*, I find an analysis of chrysoprase earth by *Klaproth* (*Beitr.*, ii. 134), and of *hard* pimelite, by *W. Baer* (*J. pr. Ch.*, iv. 49); and, singularly enough, that these analyses are identical with those given in the prospectus, with the exception of the substitution of the single word *iron* in the prospectus, for *iron sesquioxide*; and of the single word *nickel*, for *nickel protoxide*.

It being part of my occupation to post up all the mineral analyses I can get, I have been surprised at finding this coincidence, and, with much diffidence, I am induced to ask anybody whom it may concern what *Klaproth's* analysis of 1797, apparently referred to here, or that of *Baer*, either, has to do with the nickel ore of this company? It can hardly mean, I think, that certified copies of *Klaproth* and *Baer's* analyses, under statutory declaration, are to be seen at the company's offices, but it reads so in the prospectus.

Nov. 23. T. A. R.

## CENTRAL SWEDISH IRON AND STEEL COMPANY.

SIR.—This company was brought out in 1872 with a capital of 325,000/-; and to judge by the directors' names in the prospectus one would have thought, according to what was therein stated, that the money invested was not only safe but likely to yield a good dividend; besides, along with the prospectus was issued a pamphlet of eight pages by Mr. David Forbes, F.R.S. According to this report 17 per cent. was promised; and, after some new works had been finished, 29 per cent. would "loom in the future" as a dividend. Now, fellow-shareholders, how has this been fulfilled? 9 per cent. was guaranteed for the first year by the vendor, which we got, and an interim dividend for the next six months—since then nothing; and it appears that we are not very likely to get any more. Last year the works were carried on at a loss of upwards of 11,000/-, and this year will not be much better. Now, I think it is full time we bestir ourselves and look into our true position. If we allow the directors to carry on these works at a loss, as they are doing, and borrow more money, we, the ordinary shareholders, will not get one farthing, for the borrowed capital will become more than the whole estate and works are worth. A committee of investigation should be appointed to see that the subscribed capital was honestly spent, and see who is to blame for the non-fulfilment of the prospectus. In my opinion, this company is little better than the *Emma* Mine or the *Tecoma*. The 10/- shares of the Swedish Iron Company will not sell at all on the London market; they are quoted 1/- to 3/-, but on sending to my broker to sell I was informed "there is no market for them." Now, the *Tecoma* shares will sell for 7s. 6d. per 10/- share, and the *Emma* about 22s. for 20/- shares. The sooner the British law is altered the better, so that those men who issue such prospectuses as some of these are should be put in the proper place.

T. S. Edin., Nov. 23.

## CENTRAL SWEDISH IRON COMPANY.

SIR.—I observe that the 10/- shares of this company are now quoted at 20s. Surely it is now time for the shareholders to be looking to their own interests.

A SHAREHOLDER.

## CALIFORNIAN MINES, AND BRITISH CAPITALISTS.

SIR.—With much pleasure I have perused in the Journal of Nov. 20 the very honest and interesting letter of your Liverpool correspondent, Mr. Wm. MacCann, with his very novel and business-like advertisement, as well as your own very judicious remarks thereon. It is sincerely to be hoped that the advances thus made by the owners of *bona fide* and developed mines in California and Nevada will be appreciated by the parties to whom they address themselves—the actual investors in mining properties, and not the distinguished engineers and eminent financiers who concoct such pitfalls as the *Emma*, *Mineral Hill*, and other undertakings of a like nature.

The system proposed by Mr. MacCann is on an entirely new basis, and relieves the English capitalist from a large proportion of the risks attending ordinary mining undertakings, the properties offered being really mines containing ore, and sufficiently developed to justify further expenditure of capital, and not merely claims with promising indications.

A good title is offered without any payment for the property, either in cash or stock, the only remuneration asked being a share of the profits when made by the English investor.

These offers really constitute a new era in the mining world, and I doubt not will soon lead to very salutary and important results, as when the American vendor can be put into direct communication with the English capitalist through a mutually responsible agent, like Mr. MacCann, the race of London and provincial promoters will be doomed, and the actual purchaser will obtain the full value for his money, instead of, as too frequently heretofore, paying five or six times the value of the property.

Mr. MacCann's system does not in any way diminish the pre-cautionary security of the English investor of having a careful inspection made by his own confidential engineer before advancing any money beyond the expenses of such inspection, and which in many cases will be guaranteed by the vendors. It, therefore, appears that mining on the Great Pacific Slope has suddenly divested itself of more than one-half of its risks—exploratory developments and promoters' rascallities. When *bona fide* mining business is really meant it only remains for capitalists to place themselves directly into communication with such men as Mr. MacCann, when most satisfactory results may be anticipated from the honest and straightforward manner in which negotiations are likely to be conducted on this very equitable basis.

I may state in conclusion that I have known Mr. MacCann, both

in San Francisco and England for some years, and can vouch for his honour and respectability, while his agents in California are gentlemen possessing extraordinary facilities, from the nature of their commercial pursuits, for thoroughly sifting the character of any mining properties in the market before placing them in the hands of their English agent.

W. T. RICKARD, F.C.S.  
City Mining and Assay Offices, Blomfield-street.

## EMMA MINE—FUTURE POLICY.

SIR.—An individual signing himself "Member" (Stock Exchange, Nov. 17) writes an article headed "Emma Mine—Future Policy," in the Supplement to the Journal of Nov. 20, and states as follows:—"The report of Mr. Attwood is discouraging enough; it is, however, by no means as conclusive. Without wishing to injure Mr. Attwood's professional reputation, one is prompted to imagine where this expert's reputation has been gained. Peradventure, Treasure Hill, in Nevada, might be pointed at when Mr. Attwood was reporting upon Eberhardt. Some of us have not forgotten that remarkable report of his upon South Aurora. To err is human—forgive divine."

I beg to say that I never reported upon the South Aurora or Eberhardt Mines; and that in future I would advise the person signing himself "Member" to write about something he understands, or at any rate has correct data upon, and also to have the manliness when writing about any professional man to sign his own name and give his address.

In conclusion, to quote the "Member's" phrase, "To err is human—forgive divine," I will forgive this time the error, with a caution, not to do it again.

GEORGE ATTWOOD.

Queen Victoria-street, London, Nov. 23.

## THE FLAGSTAFF MINE.

SIR.—This mine, which for a long time commanded special notice in the columns of your valuable Journal, appears to have nearly dropped into oblivion, and it would almost seem that the shareholders are content that it should do so. Some are utterly disgusted with the whole affair, and others are altogether paralysed by the enormous loss sustained. Thousands of the shares are still held by the original subscribers, and by those who purchased at a premium. Sometimes, however, when things are at their worst a change comes, especially is this the case with mining properties. Witness the wonderful alteration in Frontino and Bolivia Mines, the shares of which 12 months ago would not sell at 5s., and the whole affair was well nigh in the jaws of liquidation; now those shares are 30s., with every prospect of being double that price in a short time; this marvellous change being the result of a little combined determination of the directors and shareholders to raise money by debentures. Now, Sir, why should not something of the kind be done in the Flagstaff difficulty? If Mr. Davis can make it pay to work the mine, doubtless the company could do so more economically and beneficially. It would, therefore, be far better to copy the Frontino Company, raise money by debentures or otherwise, and pay off Mr. Davis's claim at once, instead of leaving him to help himself, and when satisfied hand over the reversion to the company; in what condition may be more easily imagined than described, while at the rate he is working the ore it will probably be two or three years before his claim is paid.

I sincerely hope that at the meeting of the larger shareholders, called for the 8th proximo, the big holders will unite with the directors in some effort to rescue this property, which, from all accounts, is far from worthless, out of its present deplorable position. I understand that both the present and original directors would take a considerable amount of debentures, and as Mr. Davis has always had such faith in the mine he would probably take debentures in part payment of his claim. Until some such effort has been made I shall certainly not give up the hope that, with proper management and a fair trial of the mine (which it has not yet had), it will yet be made to pay. I trust, Sir, that this letter may assist in awakening my fellow-shareholders to some activity in their own interests.

Nov. 23.

HOPEFUL.

## THE PIQUE MINES.

SIR.—For the last few weeks I have observed some very flattering notices in the Journal of the Pique Mines, and the handsome profits they are likely to yield. If my memory serves me right, these mines were once the property of the Anglo-Argentine Company—a company which went some time ago into liquidation, but the affairs of which, so far as I know, have never been completely settled, nor has any account been rendered by the liquidators to the shareholders. Perhaps some of your readers can give me information on this point, and also how, when, and on what terms the Pique Mines passed into the hands of their present owners. The history of the Anglo-Argentine Company is not an uninteresting or uninstructive one, and I suspect these Pique Mines form a very important episode in its later developments. With proper management the original company ought never to have collapsed.

AN ANGLO-ARGENTINE SHAREHOLDER.

## BORING MACHINERY.

SIR.—If an advertiser puff his own goods under an anonymous signature, or his friends do it for him, I trust the effect will not be to induce the unwary to spend their money without first seeing for themselves. "N. B." writes about the Barrow boring machine in such a style that one really would suppose it left nothing to be desired. How different is the fact? It is, in my opinion, the least efficient of all the borers I have seen, and for very hard rock practically worthless. The rotation, or turning of the drill, is done by hand, the same turning putting down the borer as depth is attained. It requires but little experience to see that in very hard rock close fine capels require a lot of beating before an inch is bored. What takes place? The handle is turned (say) five times forward and four times backward, and the drill, working (say) 200 blows per minute, has its point rubbed away by friction in the act of turning or rotating more than by striking the rock. Hence the report of Captain Thomas to the shareholders at the meeting last Monday, that "they could get no steel that would stand." We find no difficulty in getting steel at 45s. per cwt. that will bore in the hardest granite, spar, or capels; but this is by a Darlington borer, where the turning of the borer takes place by the back stroke of the piston, and is not rubbed on the face of the stone in turning it. The rotating, or turning, of the borer, an indispensable condition, is in the Darlington self-acting, and, therefore, infinitely superior to the uncertain action of the man at the rear.

Another advantage the Darlington borer has is there are no valves to repair, or get out of order. Nothing but the wear of metal in its active motion to and fro affects its efficiency, as in all machinery. M. André has in his criticism of machine-borers, or drills, deservedly given the palm over all others to this machine. "N. B." says they bored 4 in. of granite per minute. Was it in such granite as is in one of our cross-cuts, where we are afraid to put our machine lest it bury itself at the first blow? No machine ever yet invented will bore more than half the speed in a granite upon which Darlington's machine bored to-day at the back of our cross-cut in the 187 fm. level. Twenty-three minutes were spent in boring a dry hole without water 23 in.; doubtless a jet of water would facilitate the boring. Another hole was bored, and water thrown in, including the fixing and removal of the bar and machine, and the interruptions of two gentlemen, Mr. Matthews, of Tavistock, and Captain Skewis, who were there to witness the machine work: 50 minutes were spent in boring 25 in., five or six borers were blunted. The granite is very hard and ugly. It was computed by Capt. Skewis and the three miners that it would have taken three men 24 to 3 hours to have bored the first hole. Here then is a power. How to place it quickly in position, and, like all machinery, keep it running to reap a full duty are the questions. The best machine of our generation is probably before us, give us accompanying necessities as good and mining will enter upon a phase to which the barrow will be as to the locomotive. I intend writing you on this subject, pointing out the necessities of success, and avoiding the mishaps, &c., which experience only can teach, but time does not at present permit. On a future day I may go into particulars. At

present let us have the best machine, be it whose it may. The interests of the county ask it, we who are interested demand it.

Wheal Agar, Pool, Nov. 24.

H. WADDINGTON.

## NEW METHOD OF SINKING SHAFTS.

SIR.—I have read with much interest the brief notice in last week's Journal of Mr. Firth's new method of sinking shafts, which certainly promises to be of great value in all ground being worked by the pick, and will, I should think, prove very economic. Where the ground is so tender that the sides of the shaft are injured by blasting, the importance of using such a machine as that described will be much greater than the mere saving of money represents, for as the force of the blast will never be felt on the side, the safety of the shaft will not be lessened, although the quicker process of sinking is adopted. I observe that Mr. Firth claims to work with a pressure of 30 lbs. of steam, which is probably too low an estimate, but in sinking a shaft it really matters little whether it be 30 lbs. or 60 lbs., as the distance convey it is so small. It is difficult to comprehend how a groove 2 in. wide can be made circular with a pick to the depth of 20 in., but as it has actually been done it is so much more to the credit of Mr. Firth's ingenuity for having accomplished it. That the pick principle is the best that can be adopted where the steam-hammer or rock-drill principle is inapplicable there can be no doubt, and it would be interesting to ascertain what is the hardest rock which can be successfully wrought by pick action. It appears to be only reasonable that with the high speed and consequent facility of making very small chips at each stroke, much harder rock could be dealt with than with the hand pick, but what I should wish to know is whether the difference is sufficiently great to permit of Mr. Firth's machine being generally applied in metalliferous mines?

The economy of driving levels in ordinary mines with machinery, no matter what may be its construction, I very much question, but for the sinking of the shaft it is altogether different. In the latter case speed is everything, and the exact cost very unimportant. As soon as the shaft is down ten times the number of men can be employed, and as the success of an enterprise not unfrequently depends upon the rapidity with which the work can be carried on, many mines which, worked slowly, result in nothing but loss yield large profits when worked quickly. For this reason I trust that Mr. Firth will lose no opportunity for testing the applicability of the invention to metalliferous mining.

Nov. 22.

## THE DOWSING ROD.

SIR.—It must be a matter for sincere gratification to the public at large, according to his own testimony, that we recently had one gentleman amongst us connected with mining possessed of that common-sense by which, through taking the bearings and allowing for the deviations of the rise and fall of the hills, he, together with his friend Capt. Michell, was enabled to discover in a couple of days what there cannot be much doubt about, for Capt. Kneebone has given an opinion to that effect—a mine which, when developed, will prove as rich as Frongoch. I cannot believe that he is a believer in the statement he has made. I have no wish to deteriorate any property, and, therefore, will say no more about Dr. Broke. As to dowsing itself, I think I may fairly leave him as champion of the field, as the more illustrations he has given him the darker the cloud seems to sit on his brow. I will, however, make one further remark about the Divining Rod, which I invariably find to be true, and that is that the greater the deposit of ore the greater the attraction of the rod, and by which a very good guess can be given as to whether you are likely to find a course of ore or not in any particular spot. I will conclude this, and my experience of dowsing, by hoping that Capt. Kneebone's time may be better occupied in his new situation than by absurdly endeavouring, like the French king, who turned a watch-maker, and who found out the impossibility, after being the means of killing some thousands of his subjects because he could not make them believe as he did, also had the mortification to find he could not make half-a-dozen watches keep time together.—*Goginan, Aberystwith*, Nov. 22. ABASAL FRANCIS.

## GOLD IN WALES—No. IX.

DOLGELLEY DISTRICT—VIGRA AND CLOGAU MINES (*continued*).

Mr. Arthur Dean also wrote (September, 1864)—

The notices upon gold mining in Wales, which have appeared in the *Times* since the 16th ult., have naturally attracted the attention of persons interested in that species of adventure. I will endeavour to throw some light upon the present position of gold mining in Wales.

Since the last returns till the close of 1863, published by Mr. Robert Hunt, the Clogau Mine has yielded 2301½ ozs. of gold. When the Clogau Gold Mine became famous a host of schemes sprung up around it, as always occurs whenever any mine, whether lead, tin, copper, or gold, cuts rich; many of those so-called gold mines were worthless, and the majority of them are now practically abandoned.\*

A number of the mines have been wrought with good prospects, but the time, however, to carry out such a scheme of operations as shall definitely determine their value as gold mines, has as yet been too limited. Gold mining in Wales has had to struggle against many disadvantages: 20 years ago, when I first made known the existence of the north Welsh gold district, there was scarcely an agent or workman in the whole country who had the slightest knowledge of gold ores. Again, in the matter of the machinery to be employed for the extraction of the gold from the ores there was a still greater amount of ignorance, and it is only by bit the thousand-and-one trashy machines introduced were got rid of, and the right means adopted.

Now we have agents and men keen of eye to detect gold in the visible state, or to recognise the favourable symptoms when the metal is not visible; and last, but not least, we have very simple and effective machinery for the reduction of the ores.

The rich Clogau Mine naturally takes the lead of all others in the district, and as the most advanced in all respects, a short description of the mine and works will serve to show what is now doing in Welsh gold mining. The mining territory belonging to the Clogau Company is large, and the collective lengths of the principal lodes exceed 4½ miles; some of these have in former times been extensively wrought for copper ore, and are now found to be very auriferous; but as yet only a very small piece of one of the lodes—the St. David's—has been wrought expressly for gold. This piece has been cut off by a cross-course on the west, and is about 45 fms. long, chiefly composed of quartz largely impregnated with gold; the average yield of gold-bearing quartz is 10 tons per square fathom of the lode. The total amount of the lode extracted, including drivages, sinks, &c., is about 350 square fathoms, yielding 3500 tons of mineral, good, bad, and indifferent, and of which between Jan. 12, 1861, and Sept. 3, 1864, the following quantities were crushed:—

Tons cwt.	Ozs. dwts. grs.
Rich picked ore, with visible gold.....	39 9
Yield in gold.....	9363 15 4
Poor ore without visible gold.....	2371 8
.....	1547 6 1

Total ..... 2310 17 ..... 10,911 1 15 Ozs. dwts. grs.

Average yield of all the ore crushed ..... Per ton 4 10 0

" rich ore ..... 240 0 0

" poor ore ..... 240 13 15

rage yield being estimated at 10 dwt. per ton. At the Castell Carn Duolau, Tydyllydau and Cwmheisian Mines, machinery upon the same principle as I am informed, to be erected. The one great feature which distinguishes the present from any previous phase in Welsh gold mining is the fact that simple and effective machinery for dressing the ordinary gold ore of the country at small cost has been brought into operation, and that whenever a sufficient supply of auriferous mineral exists the means for extracting the gold can be applied without difficulty even to very poor ores. I think the year 1865 will prove that gold mining in Wales can be carried out profitably, surely, and with fewer conditions of risk than attach to the working of nine-tenths of the lead, tin, and copper mines in this kingdom.

It cannot be denied that the Vigra and Clogau Mines must now rank amongst the most interesting in the United Kingdom, chiefly because of the Clogau portion having taken the lead as a remunerative gold mine. Some important facts have been placed to the credit of the Clogau Mine's account, and it is only fair to see what there is to go to the debit. The *Mining Journal* of Dec. 2, 1865, contains a report of a meeting of shareholders in the late company, a list of whom for respectability would, perhaps, stand second to no other mining company whatever. At this meeting the balance-sheet, made up to the previous Sept. 30, showed a balance of cash assets of £821., and the profit and loss account a debit of 4000!. In justice to the mine I must say, however, that I never thought this a fair way of stating the case, although it was the patent mode of preparing a balance-sheet in those days. The balance-sheet of the previous year showed a loss of 3257!—that is, as Mr. Alfred Wilson expressed it, "not crediting the gold that had been raised." As, however, this rich mine eventually ceased working altogether, it is important that the reasons why, as far as they can be ascertained, should be clearly stated. The report of the directors and the observations of Mr. Charles Martin, the Chairman, and Mr. Arthur Dean, the engineer of the company, throw a little light upon the subject. As per the report, the directors regretted that the heavy outlay had not been met by sufficient produce to enable them to show profit upon the year's operations. That although No. 2 St. David's Mine had not yielded very largely, yet the expenses incurred in opening it so far had been met by the gold produced, and this the engineer deemed to be satisfactory, especially as the quartz broken in the previous week in the 5 fm. level, No. 1 sink, gave 8 ozs. 1 dwt. from 20 lbs. of stone, equal to nearly 900 ozs. of gold, and a value of 3500!. per ton.

The returns from the poor ore fell far short of expectations, and were equally disappointing to Mr. Dean, who referred, however, to trials made from several tons of ore from the accumulations at the old copper mine, which gave 7½ dwt. of gold per ton, as evidence that there would be attained better and paying results on the completion of the railroad. The Hungarian machinery, adapted to 16 heads of stamps, was at length ready for a comparative trial with the blanket system, which, from the application of the Hungarian table to the accumulation of tailings, seemed to have worked very satisfactorily, 4 tons of copper having been obtained, and only 11 dwt. 20 grs. of gold from the large parcels of slime worked up. It was stated that the quantity of ore reduced since Sept. 30, 1864, had been 1931 tons, yielding 592 ozs. of gold, and that the gross quantity of ore reduced from the commencement had been 4761 tons, yielding 11,595 ozs. of gold, value 43,814. 16s. 10d., showing the average of 2 ozs. 8 dwt. 17 grs. per ton, and value 3L. 17s. 7d. per oz., or 9L. 9s. 6d. per ton of ore.

The report further stated that the long-pending Chancery suit (Readwin's) had resulted, after 10 days' hearing and 7 hours' judgment, in a decision in the company's favour. Mr. Gillinan explained that the suit was against the Chairman, and the company and Mr. Williams, and that the company's expenses were 713!, of which Mr. Readwin had paid 580!, the taxed costs.

The report of Mr. Dean referred to the difficulty of transporting the material to the reduction works, and that to remedy this evil the construction of a system of railways had been commenced in three divisions—a double incline, 500 yards long, and falling 456 ft. from the summit of the Clogau Mountain, to deliver the minerals to the stone-breaker above the stamps, the incline to be worked with wire ropes; the second division, 1340 yards long, called the St. David's Railway, to connect the St. David's Nos. 1 and 2 mines with the top of the incline; and from this line the third division, 700 yards long, to connect the old Clogau Mine by easy gradients, and that every effort was being made to complete by the end of the year. That at the reduction works the amalgamating machinery, the water-wheel, 32 heads of stamps, and the steam-engine were all in good working order; that the directors had determined to erect two of Rittinger's side-blow percussion tables, with the requisite classifiers, water-wheel, &c., and the application of 24 Hungarian bowls to a battery of 16 heads of stamps; and the whole of that machinery had been completed from the designs and under the direction of Mr. Flaminick. The percussion tables and classifiers answered admirably for the dressing of the tailings from the stamps, amalgamators, and Britten's pans, &c., collecting the copper ore free from gold and mercury in a remarkably clean and perfect manner. Further, that the reduction plant might now be said to be completed, and it was satisfactory to add that the blanket sand from 3000 tons of mineral formerly stamped, and the tailings from the Britten and Mosheimer amalgamators, had been passed over the Hungarian tables, and yielded a total of less than 11 dwt. of gold, showing that the loss of gold in the amalgamating and rich ore reducing department had been very small indeed. Mr. Dean at this meeting computed that 1 dwt. of gold per ton would pay the entire cost of transit and reduction.

It was verbally stated by Mr. Dean that the Hungarian tables for dressing the stamps' tailings were a success, as by them the copper ore in the sand could be extracted with a good margin of profit, although there was only 1 ton of copper ore in 300 tons of sand. He believed that the loss of gold was not greater than at the best foreign gold mines. He considered the new mine, No. 2 St. David's, to be a success, and it was satisfactory to know that the gold was making eastward towards the great cross-course, as it confirmed his opinion that at the No. 1 mine the lode would be found rich in depth when it should be cut on the western side of the cross-course. It should be borne in mind, he said, that they were actually opening four mines; therefore, the unproductive expenditure was necessarily greater than it would be at a future time when the minerals would be laid open. Thus wrote and spoke Mr. Dean, and as I believe truly, towards the close of 1865. I have not accurate data at present of the after-results of gold and quantity of quartz reduced, but these I am promised from the Office of Woods and Forests shortly.

It matters, however, very little to know at this point the exact results. They were certainly represented as unprofitably small, and eventually the company went into the vortex of liquidation—an event more calculated than anything else that could happen to Burke the Welsh gold question forever and ever. But I question whether the facts which I have been able to record can be taken to mean literally a dearth of gold at Clogau, inasmuch as the present company have picked up already some hundreds of ounces of gold which the old company, I think somewhat carelessly, to say the least of it, left behind, to the shareholders' detriment. It may be, as the St. John del Rey man-midwife expresses it, that "the future of North Wales is in the womb of time," and that another happy parturition is about to take place at Clogau. The present royal accoucheurs, probably, are not actually in a state of fear and trembling at the Cesarean operation about to come off; but they would not be altogether reputable if they evinced no anxiety at all at such a crisis. They have their apparatus ready, or nearly so, they say for the operation. I wish them well over it.

It is not my purpose at present to go into detail as regards the various modes of gold extraction which have been used in the district, although I may have to allude briefly and reluctantly to certain alleged modes of gold abstraction, about which opinions may vary a little, perhaps. But for their own sakes, and for the gold question's sake, I sincerely hope that the new company will have read through these lines quite sufficient to put them on guard against putting all the lodestuff indiscriminately to their stamps and amalgamators. They inherit, without cost to themselves, an extended series of other people's experiences, and it is devoutly hoped that they will not be slow to profit by them. With their apparatus all right, and all their square men in square holes, and their round men in round holes, there may be a fair prospect before them—that is to say, "if they do not keep more cats about the premises than can catch mice."

Had I not myself personally known in 1862, and long before that,

of the existence of gold in appreciable quantities at Clogau and elsewhere, I should not have sought the celebrated mining engineer, Prof. Rittinger, and have obtained from him at my own cost drawings of his almost perfect Hungarian apparatus for gold extraction; neither should I have fairly and fully tried the inventions of every gold doctor who happened to turn up. Nor should I subsequently have spent several thousands of pounds in an endeavour to recover some hundreds of shares in the Vigra and Clogau Company of which, in the opinion of the present Lord Chancellor, Mr. Glasse, Q.C., and Mr. Tapping, my counsel, I was wrongfully deprived. Neither should I afterwards have bought back some of my very own shares in the company at (say) three times as many pounds per share as they cost shillings to the lucky holder, had I not been tolerably firm in my own belief (or obstinacy, as it has been called) of their great prospective value. Their value did not long wait for actual proof. It came, as these details have satisfactorily shown—that is, as far as they go. I have before stated that I held shares in the late Vigra and Clogau Company from its beginning to its ending, and paid my calls to the extent of 5d. per share in full. I must be allowed to say that I smarted greatly at having to pay 20s. a share under the liquidation.\*

I openly stated at the time that I did not believe that all the gold raised at the mine went into the directors' hands. I do not believe now that it did. I believed Mr. Arthur Dean's report almost to the letter. The expenditure, it is true, was lavish; but the reduction apparatus and all appliances were apparently efficient, and yet the very paltriest amount of gold was forthcoming to the shareholders. It is incomprehensible to me now why the workings were not judiciously continued at the very least as long as such rich gold ore as I saw *in situ* last July was to be found.† It is true that my eyes have been opened lately a little more widely, and through other people's spectacles I have seen men as trees walking. The scandal is rather serious in its way, and I scarcely believe the one-half of it. Unhappily for poor human nature

\* A tale of scandal is believ'd,  
And few confess that they're deceiv'd;  
But, if a noble act you do,  
Folks wonder if the tale be true."

Perhaps I owe half an apology to your readers for making an amalgam of poetry and mining matters. This is, however, a free country, and folks can and will believe just as much as they like, and no more.

Facts are dry as well as stubborn things, and fiction should have no place in your Journal. The measurements of adits, lodes, shafts, and sumps are sleepy things to read about, so in order to keep your readers somewhat awake to my long story, I propose in my next paper, before I enter into dry geological detail of the Great Llanelly anticlinal range, to relate a dream I once had at the Royal Ship Hotel, at Dolgelley the interesting and ugly, touching gold abstraction, and a jumble of other oddments—or, suppose I put it as the astronomer Proctor puts it in his "starry expanse," and call it "A dream, but not all a dream." I fancy it will not lack interpreters.—Nov. 22.

T. A. READWIN.

#### PATELEY BRIDGE LEAD MINES AND SMELTING WORKS.

SIR,—Under the heading of "Mining and Stock Exchange News of the Week," in last Saturday's Journal, you furnish a report of the above-named mines as supplied by Messrs. F. W. Mansell and Co., in which the following statements appear:—"The Eagle level drains to a depth of about 80 fms. below the old workings a run of mines containing several highly productive veins, and a shaft has been sunk to command the several lodes in this section of the property." The report then goes on to state that—"On the other side of the mountain another level—the Perseverance—has been driven for a considerable distance, and will be vigorously continued under another series of mines, draining other productive veins at about the same depth," &c.

As Messrs. Mansell advertise that they have special business in the shares of the above amongst other mines, and it would seem to be desirable that they should be prevented giving, in ignorance, misleading reports with reference thereto, I ask you to allow me to apprise them through the Journal that the Pateley Bridge Lead Mines Company have no right whatever to the use of the Perseverance level, and to refer them to my letter in page 1071 of the Supplement to the *Mining Journal* of Sept. 25, where they will find it stated, as I now repeat, that the exclusive right of user of the Perseverance level is vested in and held under a lease for an unexpired term of 21 years from April 29, 1867, by, the Sunside and Merryfield Lead Mining Company (Limited), of which I am the solicitor and secretary, as well as a shareholder.

I may further state that at a meeting of our directors, held last week, on a report being made to them by our mine agent that some of the men of the Pateley Bridge Lead Mines had been entering the Perseverance level to clear away some of the debris, he was ordered forthwith to fix a door at the entrance, and lock up the level, and this has been done.

As stated in my letter of Sept. 20, the use of the Perseverance level would be conceded to the Pateley Bridge Lead Mines Company on liberal conditions, if sought for in a proper and straightforward manner, but if attempts be continued to obtain possession by illegal and disreputable means they will be at once resisted, and an action commenced for damages, and in that event the use of the level will not be granted on any terms whatever.

THOS. SYKES.

Harrogate, Nov. 23.

#### WEST MARIA AND FORTESCUE.

SIR,—The fact of the meetings being held out of England probably accounts in some measure for the singularly inaccurate statements contained in the letter of a "Shareholder," which appeared in the Journal of last week. His accumulation of figures would really almost lead to the supposition that the mine is in a good financial position. He states that at the date of the meeting the amount of the last sale of ores was not included in the accounts, and this is true; but, on the other hand, there was a month's cost then due, and the merchants had only been paid up to August, consequently the amount of the sale was already owing. "Shareholder" makes the discovery that the company has another large sum at command in the shape of 1000!, raised to meet the expense of the Chancery suit, "and which the company would be sure to win." This may be put down to what an American would designate as a bit of "tail talk," the big sum so cheering on paper having no real existence in fact. He now becomes practical, and recommends cross-cutting and driving at the 115 fm. level, being seemingly unaware that it will take something like a year and a half to reach that level, judging from the time occupied in sinking an equal number of fathoms down to the present bottom of the shaft.

Without following "Shareholder" further in his random statements I would suggest, in the interest of the company, that it would be well if the officials were to hold a meeting now and then on the mine, when the general affairs might be more fully considered, and suggestions be made for the future working of this promising tract of mineral ground, a great part of which, I can

\* This must be taken as a *split-fact*, and I have annoyingly to enter into personal explanation therupon. I had borrowed some money of a bank to enable me to pay promptly off the enormous bills of costs incurred in the prosecution of my first and last law adventure. A case in which, feeling my cause to be just, I had no idea of "spoiling the ship for a ha'porth o' TAR." It happened that with other collateral securities I temporarily deposited a transfer of my few remaining Vigra and Clogau shares, which were duly registered in the bank's name. After settling my account with the bank, the shares were re-transferred to me, and the transfer duly sent by the bank to the company's office for registration in my own name. Upon an application by the company's secretary to the bank for payment of a call of 10s. a share, the bank wrote me very sharply, as if I had myself been negligent. The bank, of course, debited my account with the amount of call, and I thus paid it. Being in London some months afterwards, I called at the company's office and enquired for my scrip certificate, and was told by the secretary that the transfer had not been registered because the registration fee had not been sent up with the transfer. I thereupon paid the 2s. 6d. fee and requested registration of the shares. This the directors unrighteously omitted to do. Hence my calls amounting to 2s. 10s. a share appear in the company's books to have been paid by the bank. No notices of the company's proceedings afterwards reached me (not being a registered shareholder), and this will account for my not possessing some of the official data omitted in this history. Perhaps some shareholder will obligingly supply me with it, care of *Mining Journal* office.

† The abandonment of the mines appears to me all the more incomprehensible since the receipt of the following note a few hours before the printed proof of this letter reached me.—"Clogau, Nov. 21: We have had the best week's work from the Britten pans we have ever had—363 ozs. troy of amalgam from 225 lbs. of rich visible gold rock. We crushed also 779 lbs. of poor rock, to which (say) 3 ozs. or 3 ozs. of the above may be attributed."

vouch from personal observation, remains entirely unexplored. It is not, perhaps, too much to say that no other instance can be found where the meetings are so constantly presided over by an official of the company, and where not even the names of the committee (if any), for years past, have been given to any shareholder south of Scotland. With such a mode of conducting the affairs of the mine it is not much to be wondered at that the company should have become involved in an unnecessary legal trial, and that the trial should have been lost.—Nov. 22.

AN OLD SHAREHOLDER.

#### WEST MARIA AND FORTESCUE MINES.

SIR,—Several communications have lately appeared in the Journal referring to the above mine, some of them criticising the action taken at the last meeting, more especially on the subject of a boring-machine and the call of 2s. 6d. per share. With regard to the former, from my knowledge of the manager I am sure that he will hesitate about recommending the purchase of a boring-machine until it has been proved a success in some of the neighbouring mines; and regarding the call, which is to be applied to a vigorous development, there can be no doubt it will result in important discoveries, and greatly enhance the value of the mine.

In last week's Journal a "Shareholder" has taken a much more hopeful view of the prospects, and, from my preceding remarks, it will be seen I entirely concur with him. The statement as to the financial position I will take for granted as correct, and it must be satisfactory to him to find that the long and tedious lawsuit is finally settled, and the funds to the credit of the company considerably increased, apart from the satisfaction of being successful. I feel that a great amount of credit is due to the manager for the tact and care displayed in the interests of the company during the progress of the law proceedings, and hope the time is not far distant when the company may be in a position to recognise his exertions in an appropriate manner. Looking at the favourable position of this mine, immediately adjoining west and on the same lodes as the Devon Great Consols, there is every reason to expect a brilliant future, and a sure and certain rise in the value of the shares.

Plymouth, Nov. 24.

ANOTHER SHAREHOLDER.

#### WHEAL GRENVILLE MINE.

SIR,—Having been appointed secretary to this mine by a majority of votes of the shareholders at the meeting held on the 19th instant, I venture to address you a few lines with a view to satisfy, as far as I can, the adventurers that the appointment, as well as the resolutions then passed, are to all intents and purposes perfectly legal, and that the proceedings are binding upon all the shareholders whether absent or not. I am well aware that in matters of this kind there are sure to be conflicting opinions, and that every exertion is invariably made to endeavour to set aside the verdict. In the first place, perhaps I may be allowed to say that I have had many years experience in all matters appertaining to mining, and I have made myself perfectly acquainted with the Stannary Act of 1869 in all its bearings, but at the same time I have no desire to set myself up as an authority against those learned in the law, and whose avocations bring them constantly in contact with the various Acts and all their ramifications.

With regard to the proceedings at the meeting on the 19th inst., and the resolutions passed thereat, some few of the shareholders are inclined to the opinion that it is necessary to hold a special meeting to confirm the resolutions then passed. The opinion of a very eminent counsel has been taken and submitted to the committee of management, and his ruling is that no such special meeting is required; and, apart from all personal interest in the matter, I must admit that his opinion is a sound one. There is no denying the fact that there are rules and regulations for the government of the affairs of the adventurers in Wheal Grenville Mine in existence, and those rules and regulations were in existence at the time the Act of 1869 was passed; and, further, that those rules are in force to the present day, and have been acted upon. An extract from Clause 7 of the Stannaries Act says—

"But nothing in this Act shall authorise a company to make rules or regulations inconsistent with the provisions of this Act, or shall abrogate any special rules or regulations existing at the passing of this Act for the management of any company," &c.

Now it is very clear that any rules or regulations for the management of any company existing at the time the Act was passed were not annulled by the passing of the Act, and whatever those rules were such are they now. It has been said that the rules are invalid because they have not been registered in the Stannary Court. It being compulsory that all rules should be filed in the registrar's office at Truro, it was a neglect of the secretary in not complying with the Act, and it having so happened that no shareholder or creditor had applied to see the rules, the Court has not been called upon to exercise its powers to enforce the filing of the same. The non-filing of these rules does not invalidate them, and I think we have very good proof that the rules were considered in force when it is remembered that the secretary complied with the rules in calling the shareholders together in compliance with the requisition signed by many shareholders. In the Stannary Act I do not find that there is any clause compelling a secretary or purser to call a meeting of shareholders on a requisition signed by adventurers, therefore one can hardly disabuse their mind of the fact that the rules were acted upon, and consequently acknowledged as the rules of the company.

Now comes the question—What is a special resolution? My impression is that a special resolution is one that is passed and confirmed by three-fourths of the shareholders in value, and applies only to the alteration of the constitution of the company, making new rules or substituting others for those in force, and for the forfeiture of shares for non-payment of calls. I cannot think that a resolution can be termed a special resolution when it is in the power of shareholders at the next or any subsequent meeting of shareholders to pass similar resolutions, or to undo all that was done at a previous meeting. If we refer to the Companies Act, which was no doubt consulted when the Stannary Act was framed, the definition of a special resolution is one "that has been passed by a majority of not less than three-fourths of the shares in value present in person and by proxy at a general meeting, notice having been given of the intention to propose such resolution." The fact that rules and regulations were in existence at the time of passing the Act, and that there was no rule stipulating that it should be necessary to confirm the proceedings at a special general meeting by a subsequent general meeting, and that the said rules have been acted upon from time to time, I feel convinced in my own mind that it is absolutely unnecessary to call a special meeting to confirm the proceedings and resolutions passed at the meeting held on the 19th inst., and that all resolutions there passed are strictly valid, and may be acted upon.

In a circular, dated Nov. 23, Mr. Watson says that he is advised to refuse to deliver up the books, &c., until indemnified by such sureties as he and his solicitor may approve in consequence of the responsibilities and liabilities devolving upon him as surviving lessee. I do not see myself that any responsibilities rest upon Mr. Watson whatever, simply because if the covenants of the lease are not complied with, the toller or agent to the lessors will soon remind those in charge of the non-compliance with the terms of the lease, and that it is in his power to forfeit the set if the clauses are not adhered to; and, with regard to rent, &c., Mr. Watson runs but little risk, inasmuch as he has his remedy against the company in the event of the company not meeting their engagements; but to relieve him of any difficulty in this respect it would be but a day or two's work to prepare an assignment of his interest in the lease to trustees to be nominated by the committee.

I have entirely refrained from entering into any arguments raised at the meeting on Nov. 19 *pro et con* the past management; and all I can say is that I should be sorry indeed to deprive any man of his position by unfair means, but I feel in this case that everything has been carried out by the gentleman moving for a change in such a fair and straightforward manner that I am justified in accepting the appointment offered me; and I only hope that my services may be so far satisfactory as to ensure the confidence of my employers—the shareholders in Wheal Grenville. All that I can do to bring the

mine into a profitable position I will do, and the committee and shareholders may rest assured that their interests will be my study. *Cornhill, London, Nov. 25.*

THOS. B. LAWS.

#### WHEAL GRENVILLE.

SIR.—Now that the meeting of Wheal Grenville shareholders is over I will, with your permission, refer as briefly as possible to its material points.

When I first addressed you on this subject I did so with the intention of showing that Mr. Lane's object was not so much to change the management of the mine as to get rid of a secretary who had rendered himself obnoxious to a clique, the "chief" of which might a few months ago have made a call of 1/- per share on the shareholders but for his opposition. Looking at the state of the accounts, it may have been unwise to have opposed such a call—into this I do not enter—but the secretary appears to have considered that with the prospect of a rise in tin, and an expected increase in the monthly returns, the mine would in time pay off the debt on the books without such a heavy call on the proprietary—a call, too, that would have had the effect of putting down shares to a mere nominal price, and have enabled a few on the watch to pick them up.

At the meeting, on Friday, Capt. Hosking distinctly stated that the secretary had never in any one instance interfered with the management of the mine, yet the secretary is dismissed and the management retained! Is not this as I said?

Mr. Lane's first charge against the secretary referred to a clerical error he had discovered of 30/- or 40/- in the printed statement of accounts, and which, without notice, he called upon him to explain during the progress and business of an excited meeting, which neither he nor anyone else could have done. The next morning, however, he did so, and produced the vouchers for payments.

In this charge, therefore, there was nothing whatever against the secretary, but it had raised a "cry," which was kept up for a purpose. Mr. Disraeli says in "Coningsby" that there is nothing like a good "cry" for denouncing an opponent or carrying an election. It may be "no Popery" or no "clerical errors."

"And now for our 'cry,'" said Mr. Taper. "It is not a — for a good 'cry,'" said Tadpole; "but then, on the other hand, it is a — that will sow dissension in the opposite ranks, and prevent their having a good 'cry.'"

Now let us mark the prime movement or "cry" of the meeting on Friday. Without previous notice or the slightest intimation to the secretary so that he might have got ready papers and books to refer to in explanation, Mr. Lane brings forward another error in figures of about 40/- in a printed statement of *three years ago*, and asked for an *immediate* explanation; an examination of the accounts would probably have again shown a mere clerical error, in no way affecting the final correctness of the balance-sheet, but how was a secretary, or any man living, to do this in a packed and crowded meeting, involving as it did the hunting up and examination of the bills and accounts of the year 1872? But the object of the charge was apparent to all, it was purposely brought forward in a way so that it could not by any possibility be explained until it had been scattered far and wide to the prejudice of the secretary.

And how does the Chairman act on an occasion like this? He says, "It would prejudice the secretary if he did not meet everything *step by step as it arises*." I have always considered through a pretty long experience that the duties of a Chairman of a public meeting consisted in acting as an impartial president, in keeping order, in holding the scales of justice evenly, in giving everyone a fair hearing and fair play, and in throwing oil on the troubled waters of discussion, rather than in aggravating them; but the gentleman—a perfect stranger to me—placed in the chair by Mr. Lane, acted throughout as his most zealous partisan and advocate. He never lost an opportunity of having a fling at the secretary, who appears to have excited his wrath by not always treating his partiality with sufficient courtesy and consideration. In addition to this marked support from the chair, Mr. Lane was surrounded by a few small holders, two of whom at least had five shares transferred to them for the purpose of attending, supporting, and voting for objects fixed and decided upon before hand. So palpable was this, that one gentleman to his honour, Mr. A. Richards, rose at a later period and said that he had come to the meeting to support Mr. Lane, but he liked justice and fair play, and seeing no real ground for the harsh measures that Mr. Lane was forcing on the meeting, he said he should support the secretary, and he did so.

I now come to Mr. Lane's second and last point, and as it refers to a system of keeping the accounts of cost-book mines to which I first called attention in the *Mining Journal* more than ten years ago, in reference to Tincroft and other mines, and which has ever since been commented upon, as occasions have arisen, in the City Article of your paper, I would first remark that a cost-book mining company is a mutual partnership, where the partners are expected when called together at stated times to examine, audit, and pass the accounts presented by the purser or secretary, and to vote calls or to deal with the funds in hand. At every meeting, accompanying the statement of the purser or secretary (as was the case invariably at Grenville) all bills, costs, and vouchers are placed on the table for inspection and examination by all present. When this is done, it is a satisfaction to officials, but it is no fault of purser or secretary if the duty is neglected.

In making up mine accounts they are always brought up to a certain date, crediting all ores sold, but not charging up all the costs incurred. This fact is notorious in most mines, and is always apparent to anyone who takes but a casual glance at the accounts when brought before the meetings. There are many excuses made by purser of mines for this system, and I will refer to some of them, after giving a few specimens of the system adopted in dividend mines, and which I have so frequently condemned.

Take the accounts of one of the largest mines in Cornwall—Tincroft—as presented to and passed by the shareholders present at the meeting last week. By this a profit was shown on the quarter of 1553/-, a credit balance in hand of about the same amount, and a dividend of 5s. per share (1500/-) declared. Now, if we examine the accounts more closely, we shall find ores credited to the day of meeting—8830/-—but the costs charged are at least two months behind, and as they amount to nearly 3000/- per month it is clear that so far from having any real balance of 1500/-, the debt to the bankers, or purser, must be at least 6000/-, besides heavy debts to merchants. At the time I first called attention to this state of things in the *Journal* the shares were (6000ths) at 60/- each, as they were also in 1872. Carn Brea has also been for years heavily in debt, while paying dividends. East Pool has transferred a similar debt of nearly 8000/- to a "suspense account," which is in reality money due to bankers, and a debt to be paid one day either by the mine, the present holders, or those who buy shares. When South Condurrow dividend was declared on October 27 the ores sold were credited to Oct. 23, but the costs only charged to Sept. 4. The costs due to Oct. 4 are not brought into the accounts even as a liability, and yet these accounts were placed before, audited, and signed by professional auditors. Cook's Kitchen, West Frances, and other large mines are all conducted on the same system, and after having been abused and vilified as I have been for years past for constantly exposing it in your columns, I am not, you may be sure, going to uphold it even in a *lesser* degree in Grenville. And if I have referred to these mines now it is that I may add that among the persons who are now taking up the "cry" against Grenville are those who have been well aware of the heavy debts I have referred to in other mines, and yet have largely dealt in them. So true is it that one man may steal a horse, while another may not look over the stable door.

I have said that Wheal Grenville sinned in a *lesser* degree, because what does Mr. Lane's charge really amount to? An examination of the accounts led to the fact that at the time the dividend complained of was declared there was a cash balance in hand more than sufficient to pay it. Tin was over 80/- per ton, and the mine had made a profit on the quarter equal to the dividend declared. But there was one month's costs, he said, which either was, or should have been, paid before the meeting, and thus the cash balance in hand ought, as he says, to have been appeared as 500/- or 600/- less than it did. Upon this Mr. Lane attempted to fasten by implication upon the secretary, and he insinuated it pretty broadly—that

this dividend, declared at a meeting, represented by person and by proxy, as I understand, by over 1500 shares, with one dissentient voice, was for the object of enabling the secretary to sell his shares. In reality, however, no one at that meeting expected a drop of 40/- per ton in tin; and so far from selling his own shares, it was shown the secretary then held 230, increased his interest before the next meeting, when there was no dividend, and then went on increasing it.

There was no more, therefore, in Mr. Lane's second and last point than there was in his first.

I would now mention a few of the excuses that have frequently been made to me, as a public writer, by Cornish purser and officials, and even by shareholders, when I have attacked the system of accounts I have illustrated in this letter. They have said that the produce of a mine, especially tin, takes two months to return, that when they sell one lot they have always another on or under the floors, in the pits and elsewhere, representing a considerable money value; and it would be unfair, they have said, to charge the costs close up, and beyond the value of produce on hand. Again, by the system of payments usual in Cornwall it is almost impossible to charge up the latest month's cost. For this latter point there is something to be said, and it may astonish many persons beyond the shareholders in Grenville to learn that a miner has to work eight weeks before he can receive four weeks' pay. For instance, if he commences his work on Jan. 1 his fourth week will end, and his pay become due, on the 28th, but the day for receiving his pay is four weeks afterwards—that is, on Feb. 21. Thus the agents of a mine have always a month's cost in hand. When this custom first prevailed I am unable to say, but it has been the practice throughout Cornwall and Devon for the nearly 40 years that I have studied their affairs, and now let us see how this may work in any mine.

A meeting may be held on Feb. 4, two months after a previous one of Dec. 4. The ores credited may have been sold on Feb. 3, but they would be December ores, and the costs due on Jan. 28 could not be charged in a cash account as paid on Feb. 4, inasmuch as they would not be due or paid according to custom before Feb. 24, or 20 days after the meeting.

To return to the Grenville meeting. Mr. Lane with proxies for about 1300 shares from absent holders, who neither, of course, saw or heard any of the proceedings, held in his hands a majority of 135 votes out of 4433, and which, as he said more than once, he was determined to use, so that argument and explanation were alike useless. And now let us see in what position this vote has placed the general body of shareholders under the *Stannaries Act* of 1869—which was an Act for amending the law relating to mining partnerships within the *Stannaries* of Devon and Cornwall. This Act does not recognise committees, but only "the purser," or if there is no purser "then the secretary," and if no secretary "then the principal agent for the time being." But it has been assumed, and acted upon in many cases, that mining companies formed before the passing of the Act, and having "rules and regulations" of their own, are exempt from its operations. But if we turn to the 9th section of the Act it says—"After the passing of this Act all existing or future companies having any rules or regulations touching the management of the company or conduct of the business of any mine shall file a true copy of them at the office of the Registrar (of the Court of Stannaries), and if any company shall neglect to file such rules and regulation as above required, then any shareholder or creditor may apply for an order of the Court and force them to do so.

The plain inference of this is that a company having rules of its own (not inconsistent with the provisions of the Act) may continue under them if registered, but if not registered, as in the case of Grenville, they come under the operation of the Act itself, the 6th clause of which says a "resolution passed by a company shall be deemed a special resolution when it has been passed at a meeting convened by special notice, and must be confirmed at a subsequent meeting with special notice," &c.

Ignoring all this, the secretary was summarily dismissed, and a committee appointed; but, if the resolutions are not valid until confirmed by another special meeting, who in the meantime is to carry on and provide funds for the mine? The secretary, after such an ebullition of feeling, may refuse to act further, and he, or any others holding office under the company, would commit a gross dereliction of duty were he or they to part with a single book, paper, or any funds belonging to it, except to a properly constituted authority.

#### ARGUS.

#### WHEAL WREY, LUDCOTT, AND NORTH TRELLAWNY.

SIR.—After the remarks of "Expectans" of a week previous, and again of last week from "Non-Expectans," "John Bull," &c., it does seem extraordinary that the public are to be kept any longer without some explanation as to the true position of our affairs. Let the local directors—Messrs. George Edgcumb and Matthew Loam, both of Liskeard—speak out their minds, irrespective of the intentions of their London colleagues. One side seems to pull one way and the other the opposite. Now, is it fair that subscribers should pay the penalty of some people's obstinacy? All through this abortion of 1875 has been attempted to be saddled upon the community by some speculative member of the Mining Exchange, who would seem to be paid an impossible value, and who are not independent enough to adopt some such plan as hinted at in last week's *Journal* by Mr. McKean. But no, anything fair and reasonable will not suit some people, and the directors seem to have little pluck in putting their own cash into the mine. None of them appear to have subscribed for over 150, and some for merely 50 shares, and this, be it understood, only means so many pounds. How is it that the shareholders in London are not called together and have matters officially and thoroughly explained to them, instead of this continued concealment of the truth? Two or three weeks back it was asserted that the directors were going in a few days to address the shareholders. Have they done so? No! They talk about having "consulted Capt. Rich, Thomas, and Holman, eminent mining engineers, as to the best position for placing engines, so as to command the entire property, and economically prosecute the working of the same." Now, is this so? So little confidence can be placed in the statements made and sent out. Why, if your correspondent "Non-Expectans," from Liskeard, is right there is a probability of the engines (they may be the same that Mr. Allen bought at Wheal Mary Ann last February, and which he wishes to transfer to the present company). The whole affair, I repeat, stands in a scandal, and should at once be put an end to. It is useless (without enough subscribers to be had) to think of working such a property (over 500 acres) with so limited a capital as shadowed forth in the summer. I hope this matter will not be allowed to rest until some positive step is taken. Let the subscribers be brought together at as early a date as possible, and get rid of the concealment we have hitherto been subjected to. How can the board expect a penny of calls paid looking at the existing want of confidence evinced? Let Mr. Loam and a few respectable men but take up the reins of government, and no doubt many will be content to follow his leadership.

#### FAIRPLAY.

#### MINING IN CARDIGANSHIRE.

SIR.—The first mine of notice to the north-west of the West Esquira Lie and Crown is the Bryn Glass, which has again made a start upon a small scale. Water-wheel, rods, pulleys, and stands having been erected, all may be said to be in a fair way of starting. As yet, having done but little underground, I will defer speaking of it further until my next round in the neighbourhood. Farther on we come to the Glan Castell, known as Eliza's Corner, the company is already formed, and expect in a short time to go to work with a determination to surprise the natives; this also will bear writing upon in a future journey. Next is the Cardiganshire Old Bog Mine, everybody almost knows where this mine is situated—to the north of the Clara Mine. Nothing has been done here for a considerable time, except the keeping two men on, and this has at last been suspended, perhaps for the want of cash—a great pity; but this mine, as well as its neighbourhood, should at once be put to work. Thousands of tons of rich silver-lead ore are doubtless lying under the sod only waiting a little capital to bring it to light, and how such good properties are allowed to stand so long is to me a mystery. Well stocked with sufficient machinery, plenty of water all the year round, plenty of good, able strong miners waiting to work, but all to stand so for the want of a little move, for I cannot think that the want of money can be the reason. Want of energy, want of perseverance on the part of the proprietors, and I think it might be done in a very short time, for where properties like the mines in this immediate neighbourhood are so highly thought and spoken of by others than myself, I think it is a great loss to our county that such should be the case. California Mine once existed here, but this has been divided between the Bog and the Clara Mines, now extending over a great and noble mining seat. Clara Mine is next on the route, but little is being done here, and this brings one to the Powell United Mines, where they are selling some nice parcels of ore. I hope they may all prosper, as well as their north neighbour—the Llywernog Mine, where a new water-wheel has been erected, and everything put in order, but nothing further, not a man working for many a long month. Possessing as they do some good stoping ground in their very bottom levels, I should much like to see them all working and paying the different companies good returns for their outlay. The next mine we come to, west of the Powell, is the old Cwmbrwyno, worked for many years, but now almost at a standstill. I find that there are now two or three on the floors dressing up a little tributary ore. Well stocked in every needful machinery, and only a shallow mine like all the rest spoken of above, I think the deepest of them is only about 80 fms. from surface. Why, all the mines that have ever done anything worth speaking of in this country have all done it deeper than either of these mines, then why not go at it with a will? for where there is a will there is a way, at all events, of trying it, either to win or lose; and I have no doubt that any of them so worked would be good winners. We are descending now from the moun-

tains, and are in sight of the old Goginan Mine, but as I have nothing to speak of this mine of my own personal knowledge, we will go farther down the valley into the old Tynwyd, or now called the Melinor Valley: also to the West Goginan, commonly called Cwm Shop. These two mines are being worked with spirit, but as to the future results we must wait, for I am afraid the ground is too hard (especially in the last named mine) for a payable quantity to exist, although I shall be very glad to find myself in error. It is the nearest mine in the valley to the sea, where the stratum is gradually giving way to an entirely different rock, but time alone, with regular working, will tell. My next visit will be in the Rhedol Valley, beginning at the Caergwyn and running down through the whole of the vale to the Western Working mining property.

Rheged Cottage, Nov. 17.

SAMPSON TREVETHAN, C.M.E.

#### AUSTRALIAN MINING.

SIR.—I think I can supplement the communication in the *Journal* of Nov. 13, signed "Investor," re Mr. Dicker's mines, cost of management, &c. One of these where up to Midsummer, 1874, the expenditure on mine and property was nearly 13,000/-, the cost of management for home and in the colony was over 3500/-, a probably (as you may think) unfair proportion. And this is not all. After spending this money in a so-called silver mine for several years, they now think it desirable to spend five or more thousands of pounds in working the property as a gold mine. They say the ores are rebellious, being chlorides, the gangue being a quartz and talc schist, and that all known efforts to deal with the ores in been futile, and are likely to be so. Perhaps some of your readers may be able to speak on this subject, and if so Mr. Dicker might be glad to know. I expect the truth is, Mr. Editor, that most of the Australian mines that have been introduced on this market are exhausted ones. There can be no doubt that many scores of thousands of pounds have been obtained from a too credulous public at home, who have gone in on recommendation, and have long ere this felt the non-desirability of having any more money in any fresh concerns that may be introduced to our English public. So far I may say that nearly all such enterprises have ended in a larger or smaller failure, and I doubt very much whether any correspondent can point to more than one or two that have returned their holders 10 per cent. annual interest—a very small return for mining enterprises, looking at the risk of total loss involved. The colonists seem to fight shy of taking an interest in their own local mines by leaving English holders to work their properties for them. The vendors who are generally, if not always, old colonials, sell their comparatively worthless properties for a long price; it is true they take in free shares, but what of that, the thing is cheap and a godsend to them. Other mines again are stopped, although many thousands of pounds have been, I may say, wasted in new shafts, sinking at great cost, and in one case the matter was left in abeyance while the local directors left the locality to further their chances in the Legislative Assembly. Balance-sheets of the mines are but seldom issued, sometimes not for several years, although calls have in the interim been made and paid. It does seem strange that the interest of those who help to keep the London managers in their position should be so pertinaciously neglected.

Not so long ago pertinacious circulars were sent out of another (this time a copper property) mine, and situated in Mackay district, Queensland, called Mount Goghardt Mine, in 100,000 shares of 1/- each. The vendors, of course, taking in free shares at least 50,000, and a small sum of cash (say) 1500/-, to pay out other parties. The particulars give no information as to how much the vendors have actually laid out themselves on the property. The work done is almost entirely mere surface work so far, and a tithe of the price would be abundance. The subscribers, I fancy, will be no better off than in some other concerns brought out during the last few years.

ANOTHER INVESTOR.

For remainder of Original Correspondence, see to day's *Journal*.

#### Meetings of Public Companies.

#### GENERAL MINING ASSOCIATION.

The half-yearly general meeting of shareholders was held at the offices, Old Broad-street, on Wednesday.—Mr. A. JONES (a director) occupied the chair in the absence from indisposition of Col. Scovell, the Chairman.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN said at this period of the year the board did not submit audited or complete accounts, but made a statement showing as approximately as they could the probable results of the first half of the financial year. His task on this occasion was not made the easier on account of those operations having been less favourable than desired, and that the estimated profits realised did not admit of the payment of an interim dividend. This he said advisedly, because the accounts received were necessarily incomplete in details; the details would not be before them until after the expiration of the year, therefore the directors were bound under existing circumstances to wait for the ascertained results of the year's accounts. The peculiarity of their trade had been pointed out on former occasions, and that it was the second half of the year that they looked for results to cover the large outlay during the dead season; as yet the balance in favour of the mines was very small, but in view of the adverse circumstances in operation throughout the season it was something to have accomplished even that. The almost unprecedented depressed state of trade in the United States, in Canada, and the maritime provinces had had a very prejudicial effect upon the interests of the Association. At the last meeting reference was made to the probability that they would have to submit to a considerable reduction in the selling price of their coals as compared with that of last year and the year before, and that had accounted in a very great degree for the unfavourable result he had before alluded to. Notwithstanding the reduction of wages that took place at the commencement of the year, the effect had been more than counterbalanced in the fall in the price of coals. Most anxious consideration had been given to this question by the board and their representatives in Nova Scotia—an advance of 1/- per ton represented on the year's sales a difference in their favour of nearly 6000/-, from which shareholders could readily understand the anxiety of the board to obtain the highest price obtainable, although exposed to very keen, if not reckless, competition they had been able to maintain their opening price, and hoped to do so till the close of the season. The water in the Queen's pit, which it had been hoped would have been reduced before the commencement of the present season, continued unavoidably to be a source of trouble and expense, and necessarily affected the price of raising the coal—that difficulty had now been overcome, and there was reason to expect the cost of production would be reduced to a minimum. With regard to the Lingan Colliery, it had been worked at a considerable loss, arising in a great measure from not having entirely recovered from the effects of the fire in 1873, and from the consequent increase in the cost of raising the coal. An average sale of this coal would have covered the expense, but that sale had not been made; the usual demand from the United States, hitherto the best market for this coal, had not been forthcoming—at least at a price which could be entertained. The efforts made to open other markets, though giving promise of fair results, had not materially affected the sales of this year. They had a sufficient number of colliers at Lingan to meet the demand for the remainder of this season, but it was intended not to encourage any further expense than absolutely necessary to keep the mines free from water, and in position to resume operations in the ensuing spring, if the demand should make it desirable to do so. The season this year had been unusually late—in fact, it did not open till May, and at that date they were 6000 tons in arrear of corresponding dates of former years, but the demand throughout the season had been so steady that on Oct. 27 the sales from Sydney and Lingan in 1875, which exceeded those of 1874 by very nearly 25,000 tons, was up to the average of late years. In view of the competition and of the depressed state of trade the directors consider this to be very encouraging; if the season should continue fairly open without falling off in the demand they hoped the quantity of coals sold this year would compare favourably with good years. Should their best hopes be realised they would, no doubt, show a balance of profit

the unworked areas, the season had not been very propitious for disposing of such properties, but the directors were keenly alive to the importance of this question, and the moment business gave any indications of activity this matter would receive the earnest and immediate attention of the board. During the early part of this year it was considered whether it would not be attended with some material benefit to the Association if two directors were to go out to Nova Scotia and visit the property. Nothing had arisen to make it immediately desirable, but the secretary proceeded to Nova Scotia in June, and fulfilled his mission to the entire satisfaction of the board. He had acquired an amount of information useful to the board, and no doubt some fruit would be reaped from it. The only actual business to come before the meeting was the re-election of the retiring auditors. The board proposed hereafter that this question should be settled at the first meeting of the year.

Mr. BRADY proposed the remuneration of the auditors should be reduced from 100/- to 50/- As the proposition did not find a seconder it fell through.

The auditors were re-elected with the usual remuneration (50 guineas each).

A vote of thanks to the Chairman and directors closed the proceedings.

#### ANTIOQUIA (FRONTINO) COMPANY.

An ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Tuesday, —Mr. T. EYRE FOAKES in the chair. The usual preliminaries having been disposed of,

The CHAIRMAN said he was afraid some would say that the promise of 25 per cent. had not been fulfilled, but during their first year their loss had been but 340/-, and the prospects of the mine are excellent. He then proceeded to explain the position of the property by the aid of a plan, but the explanation cannot be intelligible reported. It appears that a cross-course has been met with in Carmen lode, which, from the way in which it has affected the lode, leads them to conclude that they have been working on a string only, and that the main lode has not been seen on that side of the cross-course. This is of vast importance to the company, as if the surmise prove true they will have 240 ft. of backs on the main lode. They are erecting stamps on the Carmen side of the hill, the present being on the Hoyo side. He would like to see the balance of debenture debt owing to debenture-holders of the Frontino and Bolivia paid off, and they were, therefore, very desirous that the 3800 unallotted shares should be taken up. He believed the property would prove as good as Bolivia, and it had the advantage of having a small capital of 32,500/- instead of a large one of 110,000/- It was important, too, that their mine had never given less than 1 oz. to 1 1/2 oz. of gold per ton, whilst the St. John del Rey gave only about 1/2 oz.

The report and accounts were then unanimously adopted. Messrs. Drummond and Monypenny were re-elected directors, and Messrs. Waddell and Co. were re-appointed auditors the proceedings terminating with the usual complimentary vote to the Chairman and directors. Before the meeting was concluded 1245 of the balance of 3800 unissued shares were applied for by some of the shareholders present, and the CHAIRMAN expressed a hope that the remaining 2555 shares would be taken up by the shareholders.

#### FRONTINO AND BOLIVIA GOLD MINING COMPANY.

The ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Tuesday,

Mr. T. EYRE FOAKES in the chair.

Mr. GEORGE H. CARDOZO (the secretary) read the notice convening the meeting, and the report and balance-sheet, having been previously circulated among the shareholders, were taken as read.

The CHAIRMAN said it was with great satisfaction that the directors met them to-day, for the report, although showing a loss during 1874 of 2242/-, compared favourably with former years; and this was not all, for to the end of June of the present year, embracing four months of the dry season, which was the period of their greatest difficulties, they had realised a profit of 4160/-, so that their promise that it would prove a valuable property had been fulfilled, as it was possible that some shareholders had not read all the reports they received with the attention they demanded, and he would mention that there were seven mines now worked by the company on their own account, apart from those which they had let on tribute. At the Cecilia the predictions of Mr. White have been fulfilled. As to the Silencio, that had not yet been worked, they were now putting up the small engine sent out. The best work in the twelve hours at this mine had been 10 ozs., 11 ozs., and 20 ozs. of gold respectively, but this Mr. White considered would be exceeded. Some mineral from the dump gave in the batea as much as 100 ozs. to the ton, and Mr. White expected that he will be able to send from this mine over 40 lbs. of gold per month—that is about 500 ozs. This will, no doubt, speedily be doubled, as Mr. White expects to make from this mine 3 lbs. diaries. He had full faith in all that Mr. White stated, because he had never exaggerated the circumstances of the mines. From what he could see of the mines he had no doubt that Mr. White's statements would be borne out by facts. There was an idea on the part of Mr. White that the mine would improve in value as it increased in depth, which was a most important point, for if it were only rich on the surface it might very soon be worked out. As to the mines that are being leased, the shareholders knew that the company never had sufficient capital to work the concern, and he thought the scheme of leasing out the new lodes when discovered was an excellent one. The tributaries undertook to pay all expenses to sell the company 100/- worth of gold for 75/-, which was really reserving to the company 25 per cent. royalty, and they were bound at the end of their leases to leave the mine in good working order. That the arrangement had proved satisfactory was evidenced by the fact that during 1874 they had received 2200/- from that source. The Tigre was worked 18 months on tribute, and since it had passed into the company's hands it had in one month yielded 16 lbs. of gold. The Palmichala Mine, another tributary's mine, had also produced a large amount of gold, and this mine would revert to the company at the end of next January. There were about ten mines leased on these short terms. The shareholders would remember that they gave the directors permission to borrow 10,000/- on debenture, 9000/- odd of this was actually raised, and he did not hesitate to say that this money had been the salvation of the company. That money became repayable in March, 1874, and as they had had no funds to meet it, it was determined to sell the Frontino Mine, which was some distance from the Bolivia property, to a new company, and so get rid of the debenture debt. They established the new company, and got all but 3800 shares taken up. As the sale was effected for about 13,000/- in cash and 10,000/- in shares they really got rid of their debenture debt for two-thirds of the Frontino property. Most of the debentures were already paid off, and the remainder would be paid as the remaining 3800 shares were subscribed for. The company does not owe more than 1500/- of undisputed debt. Another important fact was the increase in the yield of the ore to almost double; it was 4 dwt. 19 grs. to the ton in 1874, and 9 dwt. to the ton in the present year. This was important, because it cost no more to stamp ore of 1 oz. to the ton than 1 dwt. to the ton. In formally moving the adoption of the report, he would remind them that in 1870 they only had 20/- at their bankers, and their shares were selling at 6d., so that they might well congratulate themselves on their present position.

A SHAREHOLDER enquired why the accounts were only made up to so remote a date? —The CHAIRMAN said that he was responsible for that; they ought to have been presented before, but he had a bad accident, which laid him up for several months, and was at one time thought likely to result in his death. As he was desirous to preside over the meeting, it had, with the consent of his colleagues, been delayed to let him recover. They had had the accounts to the end of 1874, and the present meeting but for the circumstances he had stated might have been held in July last. It is proposed hereafter to have a six-monthly balance-sheet, and as the accounts were now received up to June last, the next meeting would be held very shortly, probably about the end of next month. The accounts expected would, probably, show a profit of 1200/- per month. They would remember that a report showing the approximate profit was published after each mail, and he thought much of the confidence of shareholders in the company was felt through the openness of the directors.

A SHAREHOLDER remarked that some 75,000/- had been spent in the development of the mine, that Mr. G. Powning's defalcation constantly appeared in the accounts, and that 10,000/- worth of shares had been given as bonus to debenture-holders. These items gave the accounts a fictitious appearance, and he would, therefore, suggest that the 10,432/- standing to debit of profit and loss should be carried to capital account, and the capital account closed. This would enable them to start fresh with a clear sheet, and would remove difficulties when they reached the position of being able to declare dividends.

The CHAIRMAN promised the suggestion should be attended to without delay.

and that when the board had been advised if they could legally clear the profit and loss account from the amount standing to its debit they would call a special meeting for the purpose, so as to prepare the way for a dividend.

A SHAREHOLDER enquired what had become of Bouch's claim? —The CHAIRMAN explained how this matter stood, and the report and accounts were then unanimously adopted.

Mr. YOUNG proposed that the 350 shares remaining of the series last issued as fully paid be voted to Mr. T. E. Foakes as a slight acknowledgment of his valuable services to the company for the last five years, but as a question was raised as to the competency of the meeting to pass such a resolution without special notice, although the desirability of the vote was not doubted, it was withdrawn, and it was

referred to the question of some substantial acknowledgment (either the 350 shares or 1000/-) to Mr. Foakes to be considered at the next meeting of the company, the requisite notice to be given.

The CHAIRMAN acknowledged the compliment, and Sir Edmund Buckley, Bart., M.P., and Mr. Monypenny, having been re-elected directors, and Mr. Tilly auditor, the proceedings terminated.

#### NEW QUEBRADA COMPANY.

An ordinary general meeting of shareholders was held on Monday, at the City Terminus Hotel, Cannon-street.

Mr. N. LEABOYD (the Chairman of the company) presiding.

Mr. T. G. GILLIESPIE (the secretary) read the notice convening the meeting, and the directors' report, as follows:

In submitting to the shareholders the balance-sheet and statement of accounts to June 30, 1875, the directors, to prevent the time of our public meeting from being occupied with matters of account, or mere details, would again suggest that any proprietors desirous of obtaining specific information relative to any part of these documents, should, for their satisfaction, apply previously at the company's office.

Since last meeting the directors have kept steadily in view two great aims—i.e., the development of the mines, and completion of the railway works—and they have not failed strongly to impress upon the Board of the Bolivar Railway Company the great importance of the fulfilment of the latter object. The latest accounts from Venezuela in both these respects are favourable. The engines reached Palma Sola in August. Plate laying, which was being effected at the rate of from three to four miles per month, had advanced several miles beyond that point, and the contractors are assured that the locomotives would reach Yurumé, 35 miles from the sea coast, by the end of last month. The earthworks to La Luz (within five miles of the mines), it was expected would be completed by the same time.

The directors continue to receive by each mail, from their superintendent at the mines, periodical reports of their progress, and he expresses confidence that he will be able without difficulty to supply at the proper time the quantity of ore required for fulfilment of the company's contract with the Bolivar Railway Company. They are glad to be able to add that the result of the many assays of the ore made from time to time justifies the opinions formerly expressed as to the quality of the mineral.

During the progress of events the necessary has been forced upon the board of this company, as well as that of the Bolivar Company, for the immediate appointment of a general agent in Venezuela; and, having regard to the qualifications and acquirements of Mr. C. C. Dore for such an appointment, and their experience gained from his recent visit to Venezuela, both boards, after much deliberation, selected that gentleman to fill the important office of chief engineer and general agent. Before the approaching meeting Mr. Downes will probably have arrived at his destination. Definite action with regard to several matters of great importance to this company, which have been considered by the board, is deferred until fuller information can be procured by Mr. Downes, and his report upon them received.

In anticipation of the entire completion of the railway, the directors have instructed Mr. Downes to make immediate arrangements for the conveyance, by the most inexpensive means, of a sufficient quantity of ore to load a vessel to La Hacha, or some equally convenient spot, with a view to its transport to the coast by railway, and thence to this country.

The directors retiring by rotation are the deputy-Chairman, Mr. F. H. Hemming, and Mr. James Anderson, who, being eligible, offer themselves for re-election.

Mr. H. J. Whaley, auditor of the company, retires by rotation, and offers himself for re-appointment.

The CHAIRMAN said the directors met the shareholders with pleasure, and with a considerable degree of satisfaction, although there was very little indeed which he could usefully tell them beyond what was stated in the report. There were two subjects to which the report referred, on which the attention of the directors had been chiefly concentrated—first, the development of the mine, and next the progress of the railway. If the directors had nothing very good to tell the shareholders, at any rate they had nothing bad to communicate. The board had received no bad nor discouraging news, and nothing which could lead them to alter their opinion, or to lead them to doubt the accuracy of anything which they had hitherto stated to the shareholders respecting the property. As to the progress of the railway, it certainly had not been so rapid during the past year as the directors anticipated it would be, but the delays—or, rather, the want of more rapid progress—had not resulted from causes attributing blame to anyone, but from causes over which no one could possibly have any control. The work had proved more difficult, probably, than was anticipated, but the result was that they had now substantially constructed 35 miles from Tucacas, and engines might be said to be running to-day over 35 miles out of 58 miles, which would form the whole length of the railway. He could only ask them to infer, from the time occupied in the construction of the 35 miles, how long would be taken up in the construction of the 58 miles. The engineers and contractors informed the board that there were no engineering difficulties to be encountered of a nature to cause any apprehension in their minds, and with the desire to expedite as much as possible the progress of their railway. If the directors had nothing very good to tell the shareholders, at any rate they had nothing bad to communicate. The board had received no bad nor discouraging news, and nothing which could lead them to alter their opinion, or to lead them to doubt the accuracy of anything which they had hitherto stated to the shareholders respecting the property. As to the progress of the railway, it certainly had not been so rapid during the past year as the directors anticipated it would be, but the delays—or, rather, the want of more rapid progress—had not resulted from causes attributing blame to anyone, but from causes over which no one could possibly have any control. 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Mr HEMMING said that before the meeting broke up he wished to propose a very hearty vote of thanks to a valued and valuable officer in Venezuela, and one of long standing. It was well that shareholders should be aware that those gentlemen who went out to serve them went to a country which was very far from healthy, and the result was that their servants were occasionally obliged to return for a short time to this country. At the present moment a gentleman to whom the company had been greatly indebted for the last six years was in London, but was about to return to his duties in the middle of next month; he, therefore, begged to propose that the thanks of the shareholders and directors be given to Mr. A. Warmington for his judicious and unceasing attention to forward the best interests of the company. (Cheers.) He could speak from experience that a vote of this nature was very encouraging to gentlemen who were working at a great distance from their native country. (Cheers.)

Mr. ELERS seconded the resolution, which was put, and carried.

The meeting then broke up.

#### THE AUSTRALASIAN MINES INVESTMENT COMPANY.

The annual general meeting of shareholders was held at the offices of the company, on Wednesday, Nov. 17.

Mr. J. F. V. FITZGERALD in the chair.

The SECRETARY having read the notice convening the meeting, the report, by general consent, was taken as read.

The CHAIRMAN proceeded to explain the financial position and prospects of the company. He remarked that out of 20 dividend mines only eight were at present paying cash dividends; but several others were earning money which was being devoted to the development of the properties. Some of them would soon become remunerative in all probability, and any one so being would make a great difference in the amount available for dividends. Not only may increased dividends be fairly looked for from this source, but an important change will probably take place for the better in the course of a few months, in regard to some of the progressive mines which now yield no return. This remark applies more especially to the mines situated in New Zealand, where the prospects of their investments generally were looking more promising than for years past.

The CHAIRMAN brought before the notice of the meeting letters which had been received from some shareholders with regard to the expenses of the company, and more particularly the directors' fees. Although these expenses were certainly heavy in connection with the profits, the shareholders must bear in mind that with an increased capital and enhanced profits there would not be any augmentation in the expenses. The directors considered they had met the circumstances of the case in a fair spirit by accepting 75/- in cash and 75/- in shares of 1/-, each as remuneration for their labours from the formation of the company to the present time. The directors had frequently to pay travelling expenses in order to be present at the board meetings when absent from town, and, taking that fact into consideration, and the responsibility which they took on behalf of the shareholders, they did not suppose that after this explanation any shareholder would object to the item. The Chairman also stated that Mr. John Thomson Rennie was willing to take a seat at the board, vice Mr. W. C. L'Estrange, resigned, and the directors had pleasure in recommending that gentleman's election, in conformity with a desire expressed by a large majority of the shareholders.

Mr. DICKER (the secretary) then went over the list of the various properties held by the company, and explained their present position, expressing a confident opinion respecting some of the mines not paying dividends at present, but whose prospects were improving. He also stated with regard to the charge for the secretary's salary, which included office rent—so expensive in the City of London—clerk, &c., that the business of the company could hardly be carried on at a smaller cost.

Several Shareholders stated that they concurred entirely in the charge referred to by Mr. Dicker, and they expressed themselves satisfied with the Chairman's explanation as to the directors' fees.

Mr. DAVID SMITH (of Aberdeen) stated that he thought the directors had acted fairly in taking a much smaller sum for their remuneration than the amount secured to them by the Articles of Association. He did not think, in the present position of the company, the directors should avail themselves of the clause in question; if so, he considered the articles should be amended.

The CHAIRMAN assured Mr. Smith and the meeting that the directors would never act in opposition to the general body of shareholders. They had the interests of the company equally at heart, and he expressed much pleasure that a meeting of shareholders, representing nearly two-thirds of the share capital, were prepared to approve of the report and balance-sheet.

Mr. SMITH had no fear in regard to the present directors, with whose proceedings he was quite satisfied; but other directors, in future years, might not show the same amount of moderation, therefore it might be advisable at a future meeting to alter the clause referred to.

The report and balance-sheet were then unanimously adopted, and a dividend at the rate of 5 per cent, per annum declared.

A long discussion then ensued in reference to protecting the interests of the company as regards the progressive mines generally, and particularly as affecting the investment in Mariners' Reef, which was described by Mr. Dicker, from personal knowledge of the mine, as a property likely hereafter to give good results by a judicious outlay. One or two shareholders also spoke favourably of the mine, and the desirability of retaining full interest in it. Ultimately it was agreed that a sum not to exceed 300/- should be invested in the Mariners' Reef; but it was resolved to leave the directors discretion to increase this amount if they were strongly of opinion that it was desirable.

Mr. JOHN THOMSON RENNIE was unanimously elected a director of the company.

The CHAIRMAN called attention to the proposed increase of capital by the issue of 490 shares of 1/- each, and referred to the success attending the later investments of the company. The market now presented a most favourable position for intending investors. He declared himself satisfied that by the purchase of shares at the present low figure in the colony, and by the improvement of the properties now held, the company would prove as successful as originally supposed.

A SHAREHOLDER strongly approved of the purchase of low-priced stocks in good mines.—A cordial vote of thanks was unanimously passed to the Chairman, directors, and Mr. Dicker.

Notes.—Immediately after the meeting closed the following satisfactory information was received from New Zealand, which confirms the remarks made by the Chairman as to the probable improvement of some of the progressive mines:—

Early in the month the manager of the CALEDONIAN MINE started driving on the rich reef of the Curi Mine, which had been followed to the boundary, but it was not until the 10th inst., after a considerable section of it had been stripped, that any of the reef was broken down. Gold then showed freely, and the reef proved to be from 3 ft. to 4 ft. thick. On the 14th inst. very rich quartz was struck, and up to the time he discontinued breaking down the reef, in order to strip another section of it, this rich show continued. The quartz broken out of the first section included 2 owt. of very rich specimens. The return from these and the general stuff taken out with them is not yet to hand, but it will be a brilliant one.

The PUMPING ASSOCIATION SHAFT during the month reached a depth of 600 ft., and is still going through splendid sinking country. At present the width of the shaft is being increased, to make room for the new cistern and plunger, which are to be inserted at the 650 ft. level, and it is intended to open out drives and test the reefs at the greatest depths which can be attained after these are fixed. The new opening will be at least 240 ft. deeper than any at which the reefs had ever previously been intersected; in fact, the greatest depth ever reached in New Zealand. The importance of the undertaking and its influence upon the future of the gold fields of the colony, as well as those on the Thames, are very great, for should paying auriferous quartz be met with at this or any greater depth an amount of vitality and confidence will be generated which could not be accomplished in any other manner.

The manager of the ALBURNIA is still driving the low-level tunnel to intersect the Carpenter's Reef, and other lodes. One of these has just come to hand, and is a fine promising reef.

The most important events of the month have been the discoveries in the UNION BEACH MINE and the TOKATEA. On the whole, there is a very decided improvement in the prospects of the district.

Gold Returns from Sept. 2 to Sept. 29.

Claim, or company.	Stone crushed—tons.	Gold—oz. dwt. gr.
Alberta	300	181 0 0
Ditto, tribute	8	13 9 0
Albion, tribute (Poverty)	25	117 0 0
Ditto, do. (Belfast)	14	16 19 0
Caledonian	21	43 16 0
Kurunui, tribute	70	133 0 0
Shotover, do.	18	33 0 0
Tokata (Coromandel)	168	507 0 0
Tooley, tribute	28	29 5 0
Ditto	8	16 4 0

#### ROOKHOP VALLEY MINING COMPANY.

An extraordinary general meeting of shareholders was held at the office, Austinfriars, on Tuesday, for the purpose of confirming or otherwise the following special resolution passed at the extraordinary general meeting, held on Nov. 2:—

"That the directors are hereby authorised to sell and dispose of the business, estate, and effects of the Rookhope Valley Mining Company (Limited) to another company, consisting of a capital of 22,500/-, in 15,000 shares of 1/- each, on the following terms and conditions:—That the debts and liabilities of the present company, and the expenses of winding up the same, the whole not exceeding a total sum of 2000/-, to be paid by the said new company; and in addition, that 4000 fully paid-up shares in the said new company be allotted free and without payment to the shareholders in the present company; and, further, that another 5000 fully paid-up shares be allotted free and without payment, by way of bonus, share for share, to those who subscribe for the remaining 5000 shares at 30/- per share, to be payable in not less than three equal instalments."

Mr. PETER WATSON in the chair.

The London manager and secretary read the notice convening the meeting.

The CHAIRMAN: The object of this meeting was to simply confirm the resolution just read. He might take the opportunity to mention that, inasmuch as a large number of shareholders had signified their intention to subscribe for shares in the new company before even the resolution had been confirmed, there seemed no reason to doubt the scheme would meet with general support, by which they would be enabled, according to general expectation, to realise profitable returns. The following report was then read:—

"Nov. 22.—In the back of the 15, by four men, at 35s., worth 1 ton per fathom. In the back of the 25, by six men, at 50s. per fathom, worth 18 cwt. per fathom. I have put two men on in the back of the 25, at 30s., worth 15 cwt. per fathom. Two to clear out the 42, to be in readiness when you want the 43 end proceeded with that was decided on upon Mr. Bleakiron's last visit. The pumping and pitwork are in good working order. At surface the engine and dressing machinery are in

good working order. We have sampled 20 tons of lead ore for sale on the 27th inst.—DANIEL BROWN.

Mr. MURCHISON mentioned he had received a letter to the effect that the shareholders in Wolverhampton would agree to subscribe for 995 shares upon the condition that 3000 shares were subscribed in all. Mr. Murchison added there were only 5000 shares to be issued at 30s. per share; 3000 shares would give about 3000/- working capital, after paying the debts of the present company. The Wolverhampton letter concluded by stating that "if the London shareholders do their duty the scheme will be carried out." A letter had also been received from a large shareholder, stating that if a meeting were called, and shareholders could know who were to be the new directors, he would subscribe for his proportion of shares in the new company, and he knew others would do the same. Mr. Murchison said that about 1200 shares had been subscribed for, without including the directors. Upon the proposition of Mr. HALE, seconded by Mr. PYNE, the special resolution was unanimously confirmed.

It was agreed that a meeting be convened for Wednesday, to arrange the Articles of Association, elect directors, &c.

A vote of thanks to the Chairman closed the proceedings.

#### LITTLEDEAN WOODSIDE COAL COMPANY.

The half-yearly general meeting of shareholders was held at the Town Hall, Cinderford, on Wednesday, Nov. 17, Mr. EDWIN CRAWSHAY (the Chairman of the board of directors) presiding.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN, in presenting the statement of accounts, made up to Oct. 31, reported that the profits for the half-year amounted to 448. 11s. 11d., and the expenditure on outlay account 600/- in excess of that amount. Taking into consideration the development of the company's property during the half-year, the results were highly satisfactory. They have erected new offices, store-house, and an engine-house for the locomotive. The Hayward shaft had been sunk to the proposed depth, and they are now driving the cross-cut to win the coal.

Mr. S. W. WOODS proposed the adoption of the accounts, which was seconded by Mr. JOHN YORK JARRETT, and carried unanimously.—The usual formalities terminated the proceedings.

#### HINGSTON DOWN CONSOLS MINING COMPANY.

The fifth ordinary general meeting of shareholders was held at the office, St. Andrew House, Cornhill, on Tuesday,

Mr. W. A. THOMAS in the chair.

Mr. THOMAS B. LAWS (the secretary) read the notice convening the meeting.

The report of the directors stated that the accounts of receipts and expenditure, made up to Oct. 31, showed an available balance of 2555/- Having due regard to the capital required for working the mine in an efficient manner, the directors would recommend a dividend of 1s. per share, payable on Nov. 28, which would absorb 889/-, and leave a balance in hand of 1666/- As was anticipated in the directors' report of May 28, the directors are able to lay before the members a satisfactory statement of the company's financial position, and they are encouraged to believe that the returns will continue to exceed the costs for some time to come. The operations at the mine are being carried out in a spirit and manner like man, and your directors hope at the next meeting to be in a position to announce a continuance of the present prosperity of the company.

The CHAIRMAN read the certificate of the auditors, stating that the statement of receipts and expenditure was correct, as recorded on the books at the London office.

The report of the manager, Capt. James Richards, referred to the continuance of the course of ore discovered in the upper levels to the bottom of the mine. The shaft was in course of sinking, and would be deep enough for another level by the date of the next meeting. From the encouraging state of the mine the manager saw no difficulty in maintaining samplings at the present cost of about 700/- per month.

The CHAIRMAN said the directors had looked into the accounts, and by comparing the estimate of profit at the date of the last meeting with the estimate now, they found there was to the good 940/- leaving intact the shareholders' capital of 1800/- This would enable them to carry on the works at the mine, especially if they should receive the supply of ore promised, and in the further event of the monthly cost not much exceeding 700/- Therefore, the directors consider the 900/- was at the disposition of the shareholders, and proposed a dividend of 1s. per share, leaving 1800/- shareholders' capital, and a cash balance in hand of 1656/-

A SHAREHOLDER drew attention to the statement that in July ore sold for as low as 2/- 10s. and 2/- 5s. per ton.

The CHAIRMAN said the price depended upon the percentage of the ore. Hingston Down ore was not very rich—indeed, it was very low percentage; were it a high percentage, or the average of Cornwall, the mine would now be making immense profits. He (the Chairman), in reply to further questions, said he was not very sanguine that the price of copper would advance much. Directly the percentage advanced to a certain value an immense supply came forward from different parts of the world; at a certain price these remittances would not pay. It was an exceedingly convenient remittance, and paid well to send at a comparatively low price. But with the present price such a mine as Hingston Down did not realise a remunerative profit as they had a right to expect from a mine.

The report and accounts were received and adopted. A dividend of 1s. per share was declared.

A vote of thanks to the Chairman and directors closed the proceedings.

#### BLAEN CAELAN COMPANY (LIMITED).

A meeting of holders of vendors' shares was held at the Inns of Court Hotel, Lincoln's Inn, on Monday,

Mr. R. BARKER in the chair.

The CHAIRMAN explained that they had been called together to consider the circular of Mr. J. B. Balcombe with reference to the old Blaen Caelan Company voluntarily wound-up, Messrs. J. B. Balcombe and Price being the voluntary liquidators, and the Blaen Caelan Company of 1872 now in process of compulsory winding-up by the Court. Not having himself had anything to do with the old company, he would merely call upon Mr. Balcombe, his circular being taken as read, to make any observations he might deem necessary.

Mr. J. B. BALCOMBE said that the necessity for the meeting had arisen in consequence of its not being known at the time of the re-constitution of the Blaen Caelan Company, in 1872, that the registration of a formal contract apart from the Articles of Association embodying that contract was required by law. In consequence of this omission the test case (Rhodes' case) came before the Master of the Rolls in July last, and the Master of the Rolls decided that the Blaen Caelan Company of 1872, having failed to register the contract under which the shares allotted to the vendors—the previous company—were to be credited with 3/- per share as representing the purchase-money, Mr. Rhodes must be placed upon the list of contributors. Under these circumstances, Mr. Balcombe thought it best to call the shareholders together, to consider what could be done in the matter. He would explain that a meeting of the old company was held on Nov. 16, 1872 when resolutions were passed to the effect that "it having been proved to the satisfaction" &c., the company should be wound-up voluntarily. Messrs. Balcombe and Price were appointed liquidators, and instructed to concur in the formation of a new company, and to authorise the new company to assume the same name. The liquidators were further authorised to sell the property for 5840/- shares, credited 3/- paid, and to allot the shares received from the new company to the holders of shares in the old company in proportion to their holding. The new company held a meeting three days afterwards, at which the necessary resolutions were passed for making the purchase on the terms mentioned. The object was to avail themselves of the opportunity which the recent sale of a large quantity of ore offered for raising more capital, which was thought necessary; the re-constitution of the company being deemed the readiest means of carrying the object out. All but one or two shareholders agreed to the arrangement, and all considered that they had accepted shares with 3/- paid as the full purchase for the mines and machinery. The result of the Master of the Rolls' decision was that the holders of all those shares were liable to have that 3/- per share called up.

A SHAREHOLDER enquired what would be the amount of their liabilities if they were held to be contributors?—Mr. BALCOMBE said it would be 3/- per share; the liquidator had made an affidavit that the whole 3/- per share would require to be called up, and that the costs of the liquidation already amounted to 1130/- Mr. Rhodes' representative said that the Blaen Caelan case appeared to be entirely dissimilar to the Canada Oil case. In the latter there was a distinct contract, whilst in the Blaen Caelan case there had been no written contract. He had taken the opinion of counsel, and would say if the meeting wished it read to them, it was that of Mr. W. W. Karslake. He would mention that Mr. Rhodes stood in a somewhat different position to the other shareholders, inasmuch as he had given notice at the time of the re-constitution that he required to be paid out. The Master of the Rolls having, however, placed him on the list of contributors they were now all in the same position. In putting the case before Mr. Karslake they maintained that the Articles of Association formed of themselves a valid contract, and Mr. Karslake, in his opinion, stated that there was a binding sale as between the old and the new companies, but not as between either of them and the creditors. Secondly, that the fault of omission does not give the holders in the old company any claim to the money derived from the 3/- per share call until all the creditors of the new company have been paid, and that, therefore, no course is open to Mr. Rhodes but to pay the amount to be called up.

Mr. BALCOMBE, in reply to shareholders, stated that over 4000 out of the 8500 shares were represented at the present meeting; there were no proxies. The greater part of the 3/- per share to be called would ultimately belong to the holders of the vendors' shares, but in the meantime the costs of the liquidation would be going on, which would reduce the amount returnable. There was about 1100/-, so that there was at present a balance of 3000/- in addition to the 1250/- for which the mine and property had been sold. Their object should, therefore, be to stop the liquidation, and get the matter finally settled. He had taken the opinion of Mr. E. Cooper Willis, and he suggested that application should be made to the Master of the Rolls to allow the case of Rhodes to be re-heard, that the voluntary liquidators of the old company withdraw their claim for 16,440/- (the 3/- per share in dispute) against the company of 1872, and that a committee be appointed to agree with the official liquidator to compromise costs and stop the liquidation.

Mr. Rhodes' representative doubted whether the Master of the Rolls would

sanction the re-hearing of the case, as his opinion had been so clearly and positively expressed.

Mr. BALCOMBE said that the recent decisions appeared to throw a new light on the subject of shares issued as fully or partly paid-up when issued *bona fide* for the purchase of a property; besides, some months ago the London agents on the other side had to them thrown out a hint to agree upon costs and close the liquidation. If that were done there would possibly be a small amount to divide.

It was then resolved that Messrs. J. A. Rhodes and J. H. Taylor be appointed a committee to settle and agree,

slight accidents to the pumps, which caused delay; one of them—the breaking of the pump-rod—I do not look upon as an unmixed evil, because it has thoroughly tested the strength and stability of our engine-house and engine. Fancy a beam nicely balanced losing suddenly from one end of it a weight of 2 or 3 tons! The effect is to send the other end with a crash upon its supports, and the result in this case has been a deep indentation in the balk of timber upon which it struck, but not one pennyworth of damage to the engine or the buildings. Since the date of our last meeting, in March, I have been five times at the mine, the last time so lately as last week, and I can assure you the machinery has been put up in a good substantial manner, and is able to do all that is required of it in an economical and efficient way. The engine gained upon the water in the shaft at the rate of about 9 in. per hour, so that now it is out, we may consider that we are completely masters of it. It is customary at such meetings as this to exult in the possession of good water-power, which we have not got at Llandidloes; but we have advantages which, in my opinion, outweigh the value of water-power. Let us compare our case with others. Wye Valley Mine has ample water-power for all its requirements, but it costs 10s. per ton to carry the ore to a railway-station, and it will only cost us about 2s., so that the saving of 8s. per ton on the quantity we hope soon to send will give us a pull that will pay our coal bill. Again, at this mine cottages will have to be built for the miners, whereas at Llandidloes we shall have plenty of labour from the town. The directors, when the mine was started, each took a considerable number of shares, but from what I heard, and what I saw at the mine last week, I feel so well satisfied that I have recently doubled my former holding. We shall want a little more money to work it properly. If we could dispose of about 1700 of the unallotted shares it would be ample. The mine could go on, no doubt, as it did before, almost paying its way, and with a better engine would gain ground slowly, instead of losing it. But that is not what we want to do. We should like this next year to do nothing but sink the shaft and drive levels, for by pursuing this course we confidently trust that we shall lay open a quantity of reserve ore ground which will be the means of making a permanent and dividend-paying concern; and to this end I am instructed to say that the vendor will provide the necessary capital it quickly forthcoming, guarantee for another year the 7½ per cent. dividend, that those who have invested their money in it, and those who intend to do so, may receive interest for their money while the mine is being thoroughly developed. Our motto must be, "Sinn and drive," and the stopping will come in due course, as naturally as harvest after seed time. I measured when I was there the height of the hill in which the mine is situated. The top of the shaft is rather more than 80 fathoms above the town of Llandidloes—consequently, as the mine is 90 fms. deep, the bottom of the shaft is only about 10 fms. below the valleys round about it; it is, therefore, quite a baby mine in real depth.

Mr. KITTO, M.E., said he felt great pleasure in meeting the shareholders upon this occasion, and under such circumstances. It

was very seldom that a manager had the opportunity to meet the shareholders face to face when promises had been so completely fulfilled as had been the case with reference to this mine. By reference to his previous report it would be found that as nearly as possible the time stated in the reports when working would be commenced had been kept, and less money had been expended than computed in his first estimates. The bottom of the mine had been reached, and he assured the shareholders that that was one of the happiest days in the whole course of his experience, as he had long felt this was one of the best mines in the Llandidloes district. He managed the mine in its previous working, and knew thoroughly what it had done, and what it was capable of doing. He was perfectly convinced in his own mind if it be opened out in a proper and mineral-like way, and capital for the purpose forthcoming, it would be one of the best mines in the district. The Chairman had been kind enough to say the management was good, and everything had been well done, and he should be only too pleased if more shareholders would visit the property, and see for themselves how the work had been done. The mine was now in fork to the bottom, the water having been drained by the new engine, and it only remained for them to clear and repair the levels, which would be done in about a week, to place the mine in a good working condition. The mine had been worked previously under disadvantageous circumstances; there was no capital, and the machinery was defective, therefore they had to sink shafts and drive levels, and to find ore to pay for the outlay. This they did for a considerable time, but the engine at last broke down, and the works came to a dead standstill. He had not the least doubt that by driving the levels the mine would at no distant date pay the shareholders well. He held a large interest in money and in reputation, and he valued the latter much more than the former. With the necessary capital subscribed no effort would be spared on his part to bring about the most desirable results. They had a mile in length on the course of the lodes, and they were just now beginning to get below the valleys, where they looked for increased returns.

A SHAREHOLDER asked the amount of capital necessary to get the mine in a proper state?—Mr. KITTO said about 5000.

Mr. BEAUMONT visited the mine last week, and having done so several times previously he could judge of the progress made with regard to the machinery. The whole of the buildings and machinery were in good repair, and very substantial. Great credit was due to the management for the pains in getting the water out, for it had been a difficult matter. He confirmed all stated by their engineer, and thoroughly believed the mine would turn out well if the capital were supplied, but if not supplied it would take a longer time. He suggested the shares should, in the first instance, be offered to the present shareholders before being offered to the public.

The report and accounts were received and adopted.

A vote of thanks to the Chairman and directors closed the proceedings.

#### DOLCOATH MINING COMPANY.

A three-monthly meeting of shareholders was held on Monday, at the mine, Sir FREDERICK MARTIN WILLIAMS, Bart., M.P., presiding. There was, as usual, a large attendance of shareholders. The accounts showed that the expenditure for the three months had been 11,909. 4s. 6d., including 7505. 18s. 11d. in tutwork, tribute, and surface labour costs, and 4085. 6s. 10d. in merchants' bills. The net receipts were 14,197. 11s. 3d. on the sale of 288 tons of black tin, leaving a profit on the quarter's working of 2198. 6s. 9d. Out of this sum it was decided to declare a dividend of 10s. per share, absorbing 2148., and to carry forward a credit balance of 2134. 11s. 2d. The agent's report said—

The lode at the engine-shaft, sinking under the 326, is worth for 12 ft. long 120. per fms. The 326, east of engine-shaft, is worth 80. per fathoms. The 326, west of engine-shaft, is worth 50. per fathoms. The 314, just over this end, is sunk 9 fms., and is worth for 9 ft. long 60. per fathoms. The 314, east of east of engine shaft, is worth 35. per fathoms. The 314, west of engine-shaft, is worth 30. per fathoms. The old sump-shaft, which is just over this end, is sunk 3 fms., and is worth for 9 ft. long 20. per fms. The 302, east of new east, is producing a little tin. The 302, west of old sump, is worth 40. per fathoms. The 290, east of new east, is worth 4. per fms. The 290, west of old sump, is worth 10. per fms. The 278, west of old sump, is worth 10. per fathoms. The 266, west of old sump, is unproductive. The 264, south of Harriet's shaft, has not reached the lode, but we expect to intersect it in less than a month. The 248, west of Harriet's, is producing a little tin. The 256, west of Harriet's, is unproductive. The 238, west of Stray Park, will shortly be holed to the winze under the 215.

THE NEW BORING-MACHINE.—Mr. WHEAR asked if the boring-machine was answering well, and whether it came up to Captain Thomas's expectations?—Capt. THOMAS: No; not so far as we have yet gone. From what I hear from other parts of the country I believe there is no doubt that these machines have proved a success everywhere but here. They have been working in Lancashire and in Scotland, and I believe I am right in saying that in every instance they are driving three times as fast as could be done by hand labour. But hitherto our success here has not been so great as we could have wished. Of course we are deeper at Dolcoath than the mines are in the North, and our ground is very much harder, but if we had a machine strong enough, and steel hard enough, I see no reason whatever why we should not meet with the same success. Cornish miners do not like the introduction of new things. It takes some time before they become acquainted with them, and before they can be brought to like them. For myself, I scarcely at present know what to do. I was almost thinking that it was better to put a man to look especially after the machine, and to keep the men who worked it provided with a constant supply of tools and everything that they may require. If we are to be stopped by every little difficulty that presents itself we shall never progress at all, either in this or in any other county. Had we given way to the difficulties that beset all the inventions of the present century we should have had neither locomotives, steam-vessels, telegraphs, nor anything else, but we should have been in the same position that we were a hundred years ago. I do not consider myself that the machine has had a fair trial at all. It has not been at work more than half the time it has been here.—Mr. WHEAR: Have you confidence in the men who work it?—Capt. THOMAS: Well, I do not think that the machine is strong enough for our hard ground. Sometimes the borer gets out of order, and has to be sent up and re-fitted, and this has occasioned considerable delay, and has prevented the working of the machine more than half its time. We ought to have someone to superintend the working of the machine, but we are anxious not to lay out much money until we prove its success. We want first to establish the fact that it will drive considerably faster than by hand labour, and then we think we may fairly lay out some money in new materials. The machine will bore 3 or 4 in. a minute even in our hard ground.

TENDERING FOR SUPPLIES.—Mr. RULE asked Capt. Thomas whether he really did not think that in a large mine like Dolcoath it would be very advantageous to tender for supplies?—Captain THOMAS: Upon that matter I can express no other opinion than I have already done at previous meetings. At West Seton I said a few words which some of the papers have since made a great deal of. They were quite unpreserved on my part, but I believe they were quite right after all. I did say on that occasion, without much thought it is true, that tendering for supplies was a delusion and a snare, and I have no objection whatever to repeat the same statement now so far as materials are concerned. With regard to engines and large work of that kind, the quality of which can be relied upon, there can be no

objection whatever to tendering—in fact we have always done it, but it seems to me to be utter nonsense to tender for ordinary materials. I may mention that the other day we tendered for cast steel, and prices were sent in ranging from 2s. to 5s. Of course, the articles were not the same, and it was useless for us to accept one of these tenders because it happened to be the lowest. We should certainly have got a very inferior article. Then, again, with regard to oils. They can be adulterated to any extent, as Mr. Rule very well knows. A short time since we purchased timber at 15d. per foot less than we had been in the habit of giving, but it was not worth so much by 3d. per foot. You might, perhaps, say that we ought to return it, but that is out of the question, because when we buy timber we want to use it at once. Personally, I have no objection to tendering for supplies, and if the adventurers think it ought to be done I shall not put an obstacle in their way, but if the mine were my own I certainly should not do it.

The COAL QUESTION.—Mr. RULE next asked what the difference in quality was between the main colliery coals being used on the mine and the ordinary mine coals obtained from the merchants?

Capt. THOMAS replied that the quality of the main colliery coals was superior to the other, and was as good as can be had for mine purposes, but it cost them a shilling a ton more.—Mr. RULE suggested that a material saving might be effected by keeping the coals under covering, but—Capt. THOMAS said he did not think it would affect Dolcoath much, because they did not keep any large stocks on hand. With regard to the prospects of the future Capt. Thomas said they had had a constant succession of hopes and fears for the last 12 months. Sometimes when the price of tin had advanced they had gained heart; again, but in a short time the old price was resumed, and it was now precisely the same as at the last meeting. He was almost afraid to hazard a prediction as to the future, but if any accounts at all were to be relied upon, then he believed that the supplies in Australia were falling off somewhat, and that the general consumption was very much on the increase. In the present year the consumption was something like 30,000 tons, a larger quantity than was ever known before. Another fact to be remembered was that tin had never remained very long under 50. a ton, and he did not believe that the world could continue to produce tin at that price. His own impression was that in the coming year they would have a better price for tin. So far as the mine was concerned it must be satisfactory to see that the lode in the engine-shaft was continuing its size and value, and he hoped before the next meeting to report an improvement in the western part of the mine. (Hear, hear.)

The DUTY OF CORNISH ENGINES.—Capt. THOMAS, in answer to a question from Mr. RULE, stated that one great reason why the duty of Cornish engines had fallen off late years was that most of them were getting old, and that very few, if any, new ones were being put up. The engines that used to do such good duty were new engines, and everything connected with them was kept in first-class order.

Mr. RULE: I think the duty has fallen off for this reason. A few years ago there were tens of thousands of tons of slack or "shoddy" coals over in Wales, but now you will not find a bit there. It has been sent down here, and we have been burning it, and that is how it is the engines have not been doing such good duty.

Mr. HARVEY thought the question was well worthy of consideration, but did not believe that coal had anything to do with it.—Capt. THOMAS: We have got no "shoddy" now; that is all gone.—Mr. A. RICHARDS (Portreath): Yes, Mr. Rule bought the last of it.—Capt. THOMAS: I may mention that Mr. Basset is now making enquiries into the duties of all the pumping-engines on his mines. A professional engineer has been engaged for the purpose, and when he has concluded his enquiries he will make a report upon them. We shall then probably know what the imperfections are, and what improvements can be made.—*Western Daily Mercury.*

#### BROOKWOOD MINING COMPANY.

A general meeting of adventurers was held at the Purser's Office, Liskeard, on Nov. 19, Mr. RICHARD HAWKE in the chair. The accounts for sixteen weeks to Aug. 13, showing a profit of 400L 4s. 4d., and also a balance in favour of the adventurers to the same date of 630L 19s. 4d., were passed, and a dividend of 2s. per share was declared. The following report from the manager was read:—

*Nov. 19.—We have driven both east and west since the last general meeting at the 120 fm. level, and although the lode in each end is large it is very poor, and the ground spare for exploring. The lode in the 110 west is 7 ft. wide, principally capel and spar, yielding occasional stones of copper, but nothing to value. The three ends referred to have been disappointing to us, and we have not realised the productive lode which, judging from the 100 fm. level, we were led to expect. The lode in the 110 east is 2 ft. wide, and worth 32. per fathom. The lode in the 100 east is of similar value, and looks likely to improve. There is a winze sinking in bottom of the 100 east, 6 fms. behind the end, down 4½ fms.; lode 4 ft. wide, and worth 20. per fms. There is one stop working in the back up this level, worth 15. per fathom. The lode in the 90 east is 4 ft. wide, and worth 15. per fathom; there are two stopes working in the back up this level, worth about 18. per fms. I referred to the remaining of the 80 east in my last report, and I am now glad to say after driving a few fathoms in poor ground we have a lode worth 12. per fms. and, looking at the stopes coming up from the 90, which are several fathoms in advance of the 80, we may, without doubt, calculate to have a good piece of ground here. From the general appearance of the eastern levels reported on, you will perceive that in this direction our prospects are considerably improved, and there is perfect ventilation in this part since the communication with the 100 was effected by the winze from the 90, and in the future we hope to have much better return from this part of the mine, which at this time is looking very cheery. We have several stopes working in the western part of the mine, which yield on the average copper ore from 15. to 20. per fathom. The foregoing are the main operations, and, although a falling off in the western part of the mine, I consider the improved appearance in the east will make up for it, and when the points going east are more fully opened up we shall, I trust, regain the usual profits.—THOMAS TREVILLION.*

#### WHEAL GRENVILLE MINE.

At a meeting of the committee of management (appointed at the meeting of shareholders on the 19th inst.) held at St. Andrew's House, 28, Cornhill, E.C., on Wednesday last (Mr. GOOLD in the chair), a case submitted to counsel, with his opinion thereon, was submitted to them, having reference to the question of holding a special meeting to confirm the proceedings of the previous meeting. The case submitted to counsel (Mr. Rogers) and his opinion thereon having been read, and it appearing therefrom, and from the rules and regulations under which the company is now working, that no special meeting of the shareholders is necessary in order to confirm the resolutions passed at the special general meeting held on Nov. 19.

Resolved.—That the committee take no action in calling a special general meeting for the said purpose.

Resolved.—That Mr. John Watson be, and is hereby, required to hand over forthwith to Mr. T. B. LAWS, the present secretary, all books of account, other books, documents, moneys in hand, bills, and all other property of the adventurers in the Wheal Grenville Mine, and that Mr. LAWS be, and is hereby, empowered to receive the same, and to give such receipt as may be deemed requisite.

Resolved.—That the salary of the secretary be fixed at the sum of 6 guineas per month.

Resolved.—That Messrs. Tweedy, Williams, and Co., Redruth, be the bankers of the company.

Resolved.—That a copy of these proceedings be sent to all the shareholders.

Nov. 24. T. B. LAWS, Secretary.

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY.

The half-yearly meeting of shareholders will be held at the offices, on Friday, when the following reports will be submitted:—

The result of the half year's working, compared with the same period in 1874, gives the following satisfactory results:—

Total gross value of ores, June, 1875 ..... £26,855 7 6

..... 1874 ..... £24,985 12 7

..... Increase in 1875 ..... £1,868 14 11

..... Expenses, June, 1875 ..... £20,040 13 1

..... 1874 ..... £22,738 2 9

..... Decrease in 1875 ..... £2,697 9 8

..... Gross profits for 6 months ending June, 1875 £15,814 14 5

..... 1874 ..... £5,990 0 0

..... Increase in 1875 ..... £9,824 14 5

Part of this extra profit arises from the ores having been previously undervalued to the extent of about 3000L. Independently of this, however, the result must be considered very satisfactory. The total amount to the credit of profit and loss, including the profit up to June last, after deducting the dividend of 1s. per share, paid on April 1 last, now amounts to 34,047. 1s. 3d., which exists, as shown by the balance-sheet, in ore at the mines, at the ports of Aglabampo and Mazatlan, and in route to England, and stores.

The directors have recently received intelligence, which was duly communicated to the public papers, of ore having been cut in the 12 fm. level under the tunnel in the Mina Grande Mine, and they expect further information as to the thickness of the lode by the next mail. Mr. BREACH has also telegraphed that a lode 8 ft. wide has been cut in the Provvidencia Mine, near the boundary of the Trito Mine, at the Tunnel level, by a cross-cut. As the ground east of the present workings in this part of the mine had been hitherto supposed to be without mineral, this discovery promises to be of importance. The workings in the upper portion of the Trito and Provvidencia are satisfactory, especially driving north, but as appears by Mr. BREACH's report, the 32 is at present poor.

Mr. CLEMES has advised that either the 22 or 32 should be driven northward with all speed so as to get under the new ore ground in Provvidencia opened by the cross-cut 450 ft. north of the Trito boundary.

Since the date of the last half yearly general meeting the ore, ex Pacha, has been sold at Swansea, and realised net 1585. 11s., which is 362. 11s. more than the amount estimated by Mr. CLEMES. The Palmerston, which is bringing 300 tons of ore, and which was expected to arrive at Falmouth in October, encountered very severe gales on her voyage, and has had to put into Valparaiso for repairs. She is still at that port, and is expected to arrive at Falmouth in about four months. This is a serious disappointment to the directors. The Guaymas has arrived with about 140 tons of ore, which are now at Swansea, and will be realised forthwith. The Ellida, with 50 tons, is now daily expected, and the Cristal, with 300 tons, will probably arrive at Falmouth about January next.

The directors have received intelligence from Mr. BREACH that the furnace erected for the purpose of carrying out the lixiviating process has been started, and they look forward with much interest to Mr. BREACH's report as to the success of this new method of reduction, which has at least the merit of simplicity and economy.

Mr. BREACH, in a letter dated Sept. 16 last, says:—"Up to the present time the past has been the heaviest rainy season I have experienced here. For the past 34 days only 4 have passed without rain more or less heavy. The weather now

has changed. Fortunately we have suffered no damage in any way from the excess of water. In the mine the effects of the rainfall are more apparent than ever before in the quantity of water it yields, and I am in hopes we may not experience any scarcity during the dry season."

It will be seen by the accompanying report of Mr. BREACH that he says "that the new arrangement to bring in water from the mountain above the haciendas, in place of from Santa Rosa, will effect a considerable saving in prime cost, and

having a great natural fall, the working expenses, as compared with a steam pump, may be put down at nothing." The directors on the advice of Mr. CLEMES and Mr. BREACH, secured this property in lieu of the Santa Rosa, which was referred to in the last report. The principal cost will be in the purchase of the site where the water supply is found, and the pipes for conducting the same to the haciendas, the total of which is not expected to exceed 600L. As the success of the concentration must be considered most advantageous for the interests of the company. Of the ore mentioned that has at present been realised is that ex Pacha.

The irregularity of shipments by sailing vessels is very great, and the directors are endeavouring to make arrangements for getting a portion of the ore by steamers from Mazatlan to Panama, and thence to Liverpool. Though the freight by this route will be heavier than by sailing

## THE SILVER REGIONS OF THE WORLD—VALUE OF THE MINES, AND HOW THEY ARE WORKED.

In 1850 Nevada was not reckoned among the silver-producing regions. Mexico and South America in that year produced the sum of \$35,000,000 worth—nearly five times the amount obtained in the same year from Europe, Asia, and Africa. The production of Piedmont in that year was greater than that of any other section of the Eastern continent, and was about \$1,500,000. Austria was represented by about \$1,000,000; while Russia, Norway, Saxony, Spain, the Hartz Mountains, and Devonshire and Cornwall, in England, produced the remainder. India has often been represented as desolate of silver; but we have statements from Sir Roderick Murchison and other travellers that the Kulu Valley is so rich in ore and metallic silver that it might be made to yield enormous revenues for ages to come. What was once known as the silver country of the Vazura, in Kulu, comprises the mountainous country lying between the Beas, Sainji, and Parbutti rivers. The mines, although in the palmy days of India worked to a considerable extent, are now almost forgotten. The Manikarn Mines, in the same valley, are known to be incalculably rich, but are now unworked. The Indian authorities, and even the people themselves, lay every obstacle in the way of developing them for fear of impoverishing the country.

In the first three centuries after the discovery of America it has been computed that 160,000 tons of pure silver were exported from Peru and Mexico alone. This would be sufficient to form a solid globe of silver 100 feet in diameter. The difference between mining in Peru and mining in Mexico is only in the climate of the silver regions. The Potosi Mine, which has yielded enormous quantities of silver, is at an elevation as great as that of the summit of Mont Blanc, in a region of perpetual snow. The mines of Mexico are on the middle lands, where neither frost nor great heat is felt.

The vast mineral wealth of Peru has been developed by the patient industry of the native Indians. They live almost entirely on cocoa. Their wages per week average about \$1.50 in our money.

A very romantic story is told of the Salado Mine, which has been lost for a hundred years. Salado was a young Spaniard, who fell in love with and married an Indian girl, whereupon she revealed to him the location of a silver mine of fabulous richness, and as yet unworked. Salado, with the aid of his wife, found the mine, and, making friends with the Indians, he commenced work upon it. In a few years he was enormously rich. The Spanish Governor learned of his prosperity, and, designing to secure the mine to himself, caused a charge of conspiracy to be made against him, under which he was arrested, tried, and condemned, although the charge was entirely fictitious. When awaiting execution he promised the Governor, De Lemos, that if he would allow the proofs to be sent to Madrid, and be inspected by the king, there should be paid to him a hundred pounds of silver every day until the vessels should go to Spain and return. As the voyage one way in those days consumed about sixteen months, it is readily seen that the ransom offered was enormous. Salado was executed. The avaricious Governor hastened to the mine, but the mine was gone. It has never been found. The widow and her devoted Indians had determined that the murderer should never be rewarded for this crime, and they had flooded the mine and buried it in such a manner discovery was impossible.

The richest silver mine in the world, probably, is the Potosi, or, in our vernacular, Potosi—the Collar-Potosi being named from it. It is near La Plata, and was discovered in 1545. It has always been worked in a rude manner, but yet is aid to have already produced \$250,000,000 worth of the precious metal. For many years 1600 Indians were employed in it, and, being slaves, so cruelly were they worked that they decimated rapidly, and their places immediately filled by others. At the present time 2000 paid men are employed, and the mine yields well, and shows no signs of exhaustion.

The total silver production in the world from the year 1850 to 1875 has been estimated to be \$1,025,000,000, the United States producing one-tenth of the entire amount. The yield of Mexico is at present at the rate of \$20,000,000 annually. Peru is falling gradually behind, the yield for the year 1874 being but little over \$3,000,000.

The mines of Chili and Bolivia are being rapidly developed, and will soon furnish a material item in the annual production. In 1867 Nevada proudly pointed to a yield of \$12,500,000. In 1869 the production was hardly half as much. The production for the present year will probably exceed \$25,000,000. The annual production of the Idaho mines is about \$3,000,000, or as much as the famous mines of Peru. Colorado, in 1875, is estimated to have produced bullion to the amount of \$1,000,000.—*San Francisco Bulletin.*

[Mr. Cozzens, in his work on Arizona, entitled "The Marvellous Country, or Three Years in Arizona and New Mexico," says—"The celebrated Cerro Colorado Mine, better known as the Heintzelman Mine, is situated in the Cerro Colorado mountains, at once the richest and most barren range in the whole territory. It is distant from Tabac, the principal town of the territory, about 25 miles, and at the time of the visit was in successful operation, employing about 200 men, and paying a handsome profit. The ore at the depth of 30 ft. had yielded \$60 to the ton; at 360 ft. it had yielded nearly \$2000 to the ton; and at a depth of 100 ft. the enormous sum of \$9000 to the ton. The ore was held to average \$600 a ton. This is undoubtedly one of the richest silver mines in the world. Unfortunately, however, in 1862, the Apaches made a descent upon it, murdering the overseer and many of the miners, since which time, along with many mines in the region, it remains unworked. The same company of capitalists that own this mine are also owners of the celebrated Aravaca ranch, containing 30,000 acres of fine agricultural land, together with many valuable silver leads, said to be the most valuable property in the territory.]

## COAL MINING IN THE UNITED STATES.

## THE BITUMINOUS COAL MINES OF PENNSYLVANIA—THEIR CONDITION AND MANAGEMENT.

The Legislature of Pennsylvania passed a joint resolution (March 16) authorising the Governor to appoint a board of commissioners, to consist of three persons who have a reputable practicable knowledge of mines and mining throughout the bituminous coal regions of the State, whose duty it was to carefully and fully investigate the condition of the bituminous coal mines, and ascertain whether the same were properly drained and ventilated, together with such other matters connected therewith as were calculated to preserve the health and secure the safety of the persons employed therein. This action was induced by numerous petitions and complaints from the coal miners, stating that they were suffering both physically and mentally, while following their daily avocation, from an inadequacy of proper ventilation and drainage of mines. In accordance with said resolution, the Governor appointed Augustus Stiner, John O'Neil, and John Archibald commissioners, who entered upon their duties, and after visiting over 100 mines, they submitted a lengthy and exhaustive report to the Legislature last winter. They represent the mines generally to have been, at the time of their examination, in a most deplorable condition, and there is no reason to believe they have shown partiality, prejudice, or exaggeration. They divide the mines into three classes—those worked on what may be generally termed no system, the block system, and the double-heading system.

In the counties of Beaver, Lawrence, Mercer, the Snow Shoe Mines in Centre county, Huntington, Bedford, Blair, and Fayette, the mines generally are worked without system. The drainage is very defective, and the travelling ways half-boot up with mud and water, which the mules, as they plunge through it, throw in every direction. The ventilation is of the most indifferent character, utterly inadequate for the purpose, the current of air not being sufficient to move the anemometer in mines, working from 60 to 100 miners, with a large number of mules and drivers, the whole constituting a condition of things than which it would be difficult to conceive one more injurious, mentally and physically, to the men working in it. Entries or headings are driven onward, and as fast as rooms are cut sometimes 20 or 30 men are set to work in this narrow space, 5 feet high by 7 feet wide, while the rooms must be driven from 10 to 30

yards, and then cut over to the next room before any circulation is provided, and then only by a displacement of the air, caused by the motion of the cars, which drives it around the pillars. In some instances the air is obtained from the adjoining works, which reaches them more or less loaded with noxious vapours, black damp, and other impurities, in which it is difficult to carry a lighted lamp. Frequently the miners are compelled, on account of the foulness of the air, to stop work for some days. The stables located at the bottom of the hoisting shaft, throw out an effluvia penetrating some distance around through the sluggish air current, and producing a sickening sensation to persons descending from the fresh air. "The shaft purporting to be the escapement is used also as a pumping shaft, and at the bottom is placed the engine, furnace, and boilers, with an iron chimney like a steamboat stack to carry the smoke out, but all poisonous gases generated in the mine, together with powder smoke, &c., ascend by the shaft, while the ladders are of the most primitive fashion, and anything but safe. In other cases the machinery and the furnace are located at the top of the shaft, the steam being conveyed down the shaft in pipes, and the exhaust steam from the steam pump ascends the shaft, creating a great heat, which, together with the poisonous gases generated in the mines, the powder smoke, and the laborious effort required to ascend the ladders, makes it anything else than a safe encampment. The passage is obstructed with pumps, steam pipes, ladders, landings for ladders, &c., leaving an opening of not more than from 10 to 12 square feet, through which to ventilate the whole mine. Main air courses are driven from 3 to 4 ft. wide by about 1 ft. 8 in. high, which are entirely inadequate, leaving powder smoke standing thick and oppressive through the workings."

The block system, the commissioners say, will do very well after the blocks are cut out and the air current provided, but previous to that miners labour under peculiar difficulties. "The blocks vary in size from 150 to 500 yards one way, and from 100 to 300 yards the other way. Thus the working man has to cut this long distance, then turn at right angles and cut the other side from 100 to 300 yards, before there is any chance for a circulating current. These places are generally worked by two men shut up in this long narrow burrow, usually about 7 by 5 ft., with a wall of powder smoke behind them, generally so thick that a light a few feet distant looks like a small spark, which, with the carbonic acid gas thrown off by the men working, and by the combustion of their lamps, produces a place than which any more injurious to health is hardly to be conceived. This system prevails largely in the counties of Tioga, Westmoreland, Washington, Allegheny, and a part of Fayette, lying near the Monongahela river, indeed, as far as it can be said of any except no system, this system prevails quite generally throughout the bituminous region."

The double-heading system, an example of which is given at the Morris Run Mines, in Tioga county, is highly approved by the commissioners. In this plan two main headings are driven parallel to each other and a few yards apart, with regulators applied to the several cross headings at the junction with the main incast, thus giving to each cross heading its proportionate share of pure current entering the mine fresh from the outside, and returning it by an overthrow to the outcast. This system has not yet been given general application. It is adopted in a few mines in the counties of Washington, Westmoreland, Fayette, and Allegheny, besides the instance already noted in Tioga. Linn, Wood, and Co.'s new mines at Pine Run, Allegheny county, are driven on this system, and when completed by the application of the furnace, will fairly illustrate its value, standing alone in this regard in Allegheny county. The Cliff Mines in Washington county are driven on this system, but the advantage of it has been lost by defective distribution of the air circulation. The Coal Bluff Mine, adjoining the above, is likewise worked on this system, and in regard to it the commissioners say:—"In point of excellence of condition alike for ventilation and drainage, this mine stands out in bold relief at the head of all the mines visited by the commission."—*Saward's Coal Trade Journal* (New York).

## TAPER STEEL ROPE.

In winding from great depths the rope itself becomes an important item in the total weight to be raised, and as it was necessary at the Adelbert shaft at Przibram, in Bohemia, to draw a load of 112,000 tons per annum from a depth of about 620 fms. (English) in 16 working hours per day, considerable care had to be exercised in making the arrangements, especially as the character of the shaft did not permit of the use of double-decked cages, so that not more than 1 ton could be drawn at one time. To make the 112,000 trips per annum it was necessary to run 20 trips per hour during the whole 350 working days, at a speed of 20 feet per second, including stoppages, or 31 feet per second (over 21 miles an hour) maximum speed. With these data Mr. John Novák proceeded to calculate in detail the form and dimensions of winding gear of different constructions necessary for performing the work. He finds that conical drums with a spiral bed for the round drawing ropes to coil on would have required to be of such large dimensions as to be unmanageable—43 ft. diameter, diminishing to 31 ft., and 20 ft. 7 in. wide. Flat ropes, although showing a slight gain mechanically, had the advantage more than counterbalanced by the increased cost of the rope. Mr. Novák considers that the supposed greater durability of flat as compared with round ropes is to be attributed to the fact that the former are usually of a proportionately heavier section than the latter, and that too small a diameter of drum is often adopted for round ropes. When flat and round ropes are made so as to be strained equally, and the proper diameter of drum is chosen, the latter will certainly wear as long as the former. The experience already derived from the use of round steel wire ropes at Przibram bears out this conclusion, where they are found to stand two years' continuous wear, or more even in one instance. The final selection, therefore, was tapered steel wire-rope, of circular section, with a breaking strain of 721 tons per square inch, assuming sixfold safety strength in the working strain. The rope was formed throughout of 36 wires, the taper being obtained by reducing the gauge of the wire. The lowest section of 328 ft. was of wire 0.075 in. diameter, and weighed 8 cwt. 5 lbs.; the second length, 590 ft., was of 0.079 in. wire, and weighed 4 cwt. 19 lbs.; the remaining three lengths were each 918 ft. long; the diameter of the wires being 0.088, 0.093, and 0.103 in., and the weight 8 cwt. 16 lbs., 10 cwt., and 11 cwt. 2 lbs. respectively, the whole 3672 ft. weighing 35 cwt. 42 lbs. or only about half the weight of a flat rope of equal strength. The diameter of the drums was determined so as to take the whole of the rope in two thicknesses, as experience showed that the tapered end, when lapped a third time, is liable to become wedged in the hollows between the thicker portions below, which causes the wires to bend and be torn. Of course the great length precluded the possibility of coiling the rope in a single layer. The final dimensions chosen were 19 ft. diameter, and 275 ft. breadth of face, which at 72 coils in a double layer, gives a capacity 4451 ft., or about 790 ft. more than the present requirements.

Experiments proved that the difference between the power required to move the load at the beginning and ending of the journey was not greater than with flat ropes. Supposing a mean speed of 20 ft. per second, or 20 revolutions per minute, and 54-horse power for engine resistance, &c., and the difference in drawing from a depth of 1120 metres was 298-horse power; from 1000 metres, 258-horse-power; from 800 metres, 193-horse power; from 600 metres, 135-horse power; and from 400 metres, 83-horse power. The conclusions to be drawn from the experiments are—1. That it is not desirable, in winding from depths exceeding 2300 ft., when only a light load is drawn, to use flat ropes, as any slight equalisation of balance obtainable is not in proportion to the extra cost.—2. Spiral rope drums cannot be used for great depths, as they must be so large and heavy that the power saved by the counterbalancing of the ropes is lost by the increased friction on the bearings.—3. For shafts of 1300 ft. and less flat ropes are not to be recommended, as with a tapered round steel rope at such depths no counterbalancing of the ropes is necessary.—4. For shafts between 1300 ft. and 2300 ft. deep, where a heavy load has to be drawn flat ropes may be advantageously used, especially if the principal workings are at the lowest

point in the shaft. For these dimension, however, spiral drums are expressly suited, as they may be made of reasonable size, allow for a perfect counterpoise of the ropes, and are also better protected against wear than plain drums. The engines adopted were horizontal and direct-acting. The cylinders are 20.8 in. diameter, with a length of stroke of 6.6 ft. The steam pressure on the boiler was 7½ atmospheres, and the initial pressure on the piston 6½ atmospheres, the maximum duty of 300 net horse-power being attained with the cylinders ½ full, and 20 revolutions per minute. The mean duty of about 130-horse power is attained with a steam admission of 1-5th of the stroke. A modification of Meyer's expansion gear is used, the reversing is effected by Gooch's link motions, and the movement of the expansion slides by special eccentrics. With the exception of the pistons, which are of wrought-iron, all the moving parts of the engines are of Bessemer steel. The main shaft is about 15 in. in diameter and 15 ft. long. The drums are made with 12 radial wrought-iron arms of a  $\square$  section and cast-iron seatings. The rims are of wrought-iron, with a wooden bed for the rope, the sides being braced together by diagonal intersecting ties. The reversal of the movement is effected by the water-pressure engine directly on the link motions, about ¾-horse power being sufficient to pull over the links when making 20 revolutions per minute. For ordinary working a steam brake is provided which can also be operated by hand if necessary. The engines which were constructed by the Prague Engine Building Company, work more economically than similar engines already in use at Przibram, in which the expansion is effected by slides and link motion alone the relative consumption of fuel being in the proportion of 7 to 10.

**AUTOMATIC RAILWAY SIGNAL APPARATUS.**—An improved automatic apparatus for working the ordinary semaphores under the block system has been invented by Mr. W. N. HAGGARD, of Westwood Park, Forest Hill, who estimates that its adoption will result in a saving to railway companies of many thousands a-year. He explains that the "absolute block" system of semaphore signalling requires frequent signal stations, otherwise the traffic would be seriously interfered with, and that to effect the signalling by manual means each signal station has to be served by more than one man, to prevent excessive over-work. At the present wages of 22s. per man per week the expense of working traffic in this manner is, he thinks, too great for many railways to support, and it is burdensome to all. He points out that any mechanical impulse from a train going at high speed takes the form of a percussion or impact, and, therefore, can only be used for trifling work, such as slightly depressing a rail-lever or treadle; this is well known, however, to be sufficient for the releasing of a catch, or otherwise allowing machinery to act. Gravity and spring pressure, he admits, are available for moving the signals, but every machine which has them for prime mover requires to be periodically wound up by some other force. Steam power he considers as out of the question, and the hydraulic and pneumatic powers as unmanageable: there only remains, he says, electro-magnetism, which he regards as admirably adapted for the particular work required, but practically too weak to overcome much resistance, unless assisted by some of the so-called mechanical powers. The ordinary magnet and armature he considers to be incapable of releasing sufficient aid, whilst the rotary electro-magnetic engine is able to effect help to any adequate extent or degree. Mr. Haggard refers those interested to the specification of the patent for a description of his invention; but his account of the safety of the apparatus will suffice for all practical purposes. A railway of more than one line is, he says, so to speak, broken into greater and lesser sections by junctions and large stations, for small shunting stations may be disregarded in this respect. The first signals of each line of each section should be automatic, and visible from the starting points. The final signals should each be under the control of a signalman in his box at the junction or station. The intermediate signals should be automatic, and situated at such distances as may suit the exigencies of the traffic. The signals guarding small shunting stations should be only automatic at the pleasure of the stationmaster, who could block his section during shunting operations. The receptacle for determining the return of a signal to "safety" should be placed a "pulling-up" distance beyond the next semaphore. No collision of the normal kind could then result from an accidental derangement. A wire from the final releasing receptacle, or from the penultimate semaphore, would telegraph the approach of the train to the signalman in his box at the station or junction. A train should not be started until the first signal indicates "safety." Each driver should have strict injunctions to pull up before reaching any semaphore which displays a "danger" signal; but, if from the slippiness of the rails, or other cause, the engine passes the semaphore, care should be taken that none of the train wheels are allowed to rest upon the rail lever. If the whole train should pass the treadle, the guard should dismount, and depress it with a proper instrument, as soon as the lever has risen, and the train is prepared to start again. Except by reason of culpable carelessness on the part of an engine-driver, the releasing treadle of the back signal would never be depressed until protection was afforded by the near semaphore. The signalman at junction or station could keep his final signal "danger" until he had cleared the way, notice of an approaching train having been duly communicated to him. With a proper code of rules the above plan would preclude the chance of accident; but, if desired, precautionary accessories might be provided at small cost. For instance, each normal signal might be supplemented by a caution disc and special coloured lamp, to be displayed in case of a temporary derangement. Moreover, a wire from each semaphore to the proximate station would telegraph the progress of each train, and would give information of any derangement. In fact, the apparatus, if proved efficient by trial, furnishes a safer means of regulating than is afforded by nerves and muscles, because a signalman may move his signals at an improper time, whereas the apparatus could not. Again, no faultiness in the apparatus could keep the signal at "safety" when a train passed a semaphore without its being perceived by an observant engine-driver and guard, whereas a driver has no means of detecting an error in the present manual signalling. As by the adoption of an invention of this kind passengers need fear none but abnormal collisions; and as the absolute block is extended by giving the train the protection of the penultimate semaphore, railway companies should at least give it their consideration, especially as the inventor states that 50f. or so will suffice to thoroughly test the system.

**ROCK-DRILLING MACHINERY.**—Some improvements in this apparatus, patented some 12 months since, have been made by Mr. W. WALKER, of Saltburn by the Sea. According to one of the present arrangements the engine cylinders, instead of being connected direct to a cranked drill shaft, are connected to an intermediate crank shaft which drives the drill shaft by means of a pinion in gear with a spur-wheel on a hollow shaft, through which the drill shaft passes, the latter having one or more longitudinal grooves into which longitudinal feathers on the hollow shaft fit. The drill shaft has a screw thread cut on it, and screws through a nut held by a friction strap at the front end of the drill frame. In order to effect a slow advance of the drill shaft, the said nut is by preference rotated by means of gearing from the crank shaft at a somewhat slower speed than the drill shaft. The articulated arm carrying the drill framing is provided with a telescope joint, by which the arm can be lengthened or shortened for bringing the drill into the required position. Two or more of the articulated arms with their lifting plates are mounted upon a hollow vertical pillar of large diameter mounted upon the drill carriage, inside which pillar are vertical screw splindles, each of which serves to raise or lower one of the lifting plates and articulated arms; the latter can be swung round upon the pillar into any desired position instead of being limited in their motion to a certain angle, as in the previous arrangement.

**ACCUMULATING HYDROSTATIC PRESSURE.**—According to the invention of Mr. LOUIS MESSAGNY (of Messrs. Osscher, Meadach, and Co.), of Paris an accumulator is constructed with the cylinder and plunger inverted, the plunger being fixed on a pedestal foundation, while the cylinder moves up and down over the upper end thereof. The loaded tank is formed with its bottom bulged up to a considerable extent, being thus in great part of annular form, and it is suspended from the lower end of the cylinder by the central part of the bulged up bottom, so that the centre of gravity of the tank is always below its point of suspension, and the use of guides is thus dispensed with. Many holes are provided through the annular part of the tank to gain access to the packing of the cylinder.

**TRANSMITTING MOTIVE POWER.**—The machinery invented by Messrs. GOUBET and MONROE, of Paris, differs from that generally employed in the entire suppression of belts and their replacement by steel or iron chains of a particular type or form; in the fitting of the fly-wheel of each machine or tool loosely on its shaft instead of keying it thereto, so as to render the fly-wheel quite independent of the machine, the working of which it regulates at the moment the machine stops, which can thus be done absolutely instantaneously: in the driving of each tool or machine through the intermediary of a spring clutch mounted on the tool or machine shaft, so as to prevent shocks at the time of putting into work; and in the introduction of ratchets on the driving shaft at the point where it transmits the motive-power to the tool with the object of enabling the latter to profit by the sudden motions which accelerations of speed of the prime mover tend to give it.

**IMPROVEMENTS IN PUDDLERS' RABBLES.**—Hitherto puddlers' rabbles and paddles have been made by shearing to the required form pieces of sheet-iron, and welding thereto a piece of bar iron to form the shank. To obviate the loss of time and material occasioned by this method of manufacture, Mr. H. HUNTING, of Jarrow, would pass the bloom of iron for rabbles through rollers, cut to a suitable form: this operation prepares the iron for the finishing rollers and forms in what will be the shank of the tool, one or two grooves for the purpose of affording space for the superabundant metal in the blade being rolled therein by the next process. On the blade of the tool entering the second pair of rollers, the metal is driven from the shoulders into the grooves in the shank. At the proper time they are sawn off from the following tool, and the blade bent at right angle to the shank. Puddlers' paddles would be made in a similar manner, the rollers being cut to suit the altered shape of the tool.—Another invention connected with puddling apparatus has been patented by Messrs. CLOUGH and RIDALPH, of Stockton-on-Tees. Their improvement relates to applying the supporting apparatus to turn upon a column mounted over the furnace and to be moved into the desired positions for effecting the desired stirring and agitation of the molten metal. The engine employed is of the type working without fly-wheel and having no dead centre. The puddling machinery may also be driven direct without the intervention of any rotary motion. The suspension rods for carrying the rabbles are also formed telescopic.

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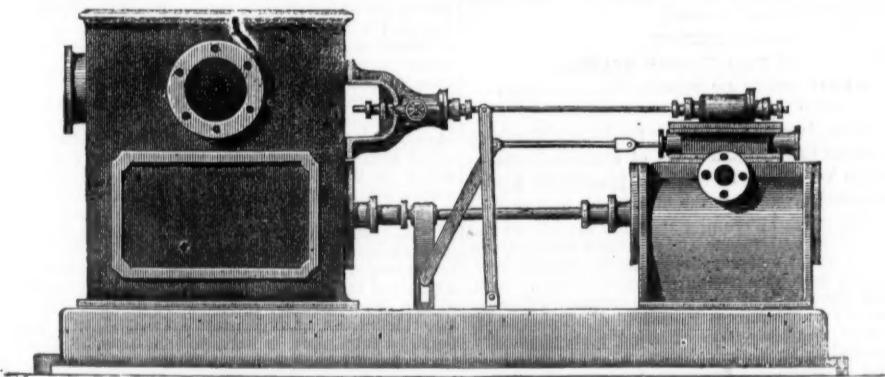
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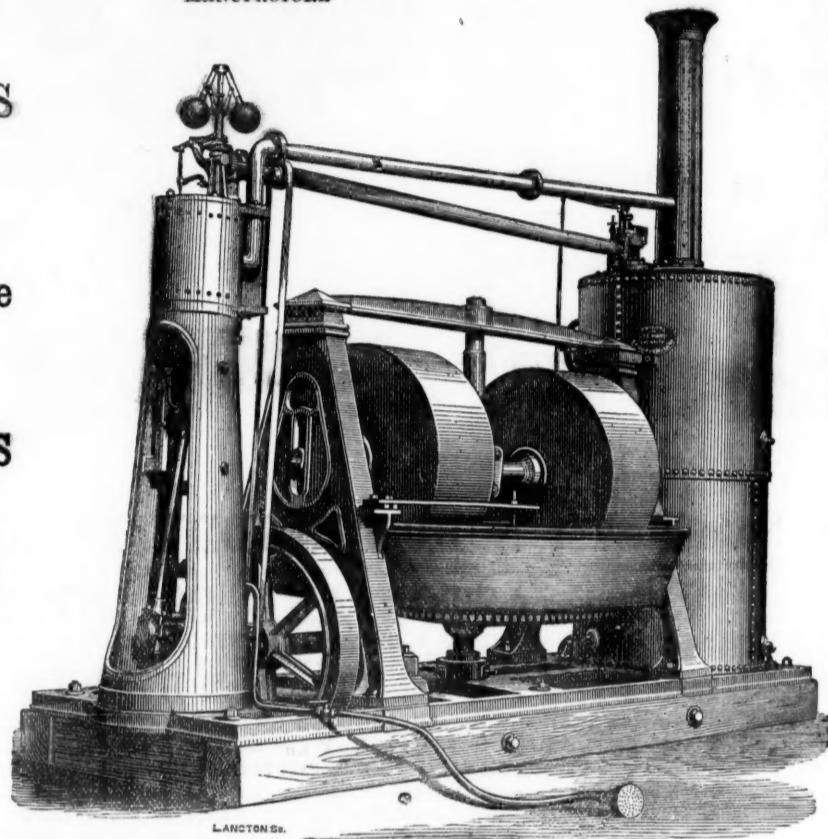
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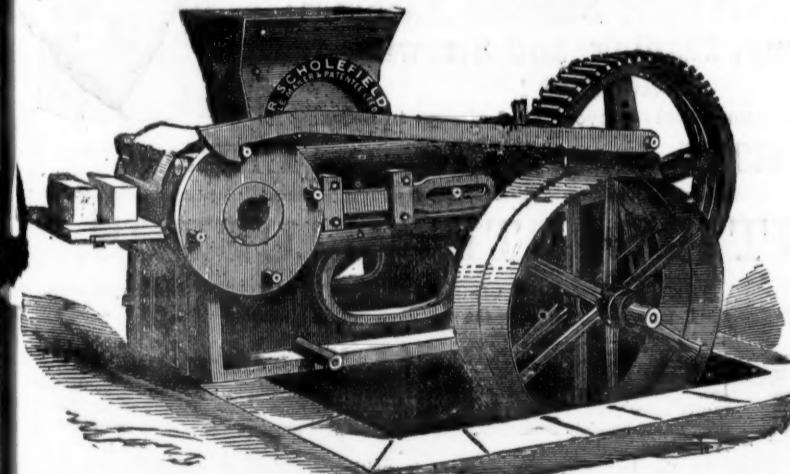
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PATENTED 1873.



production, and the hands required to make 10,000 pressed bricks per day:—

2 men digging, each 4s. per day	£0 8 0
1 man grinding, 4s. 6d. per day	0 4 6
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine-man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0

Total cost of making 10,000 pressed bricks £1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

As the above Machinery is particularly adapted for the using up of shale, blind, &c., it will be to the advantage of all Colliery Owners to adopt the use of the said Brick-making Machinery.

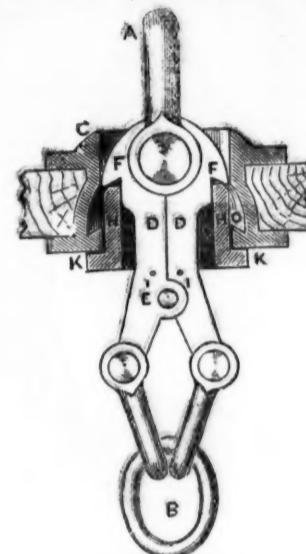
THE MACHINES CAN BE SEEN IN OPERATION AT THE WORKS OF THE SOLE MAKER AND PATENTEE DAILY.  
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OVERWINDING IMPOSSIBLE.  
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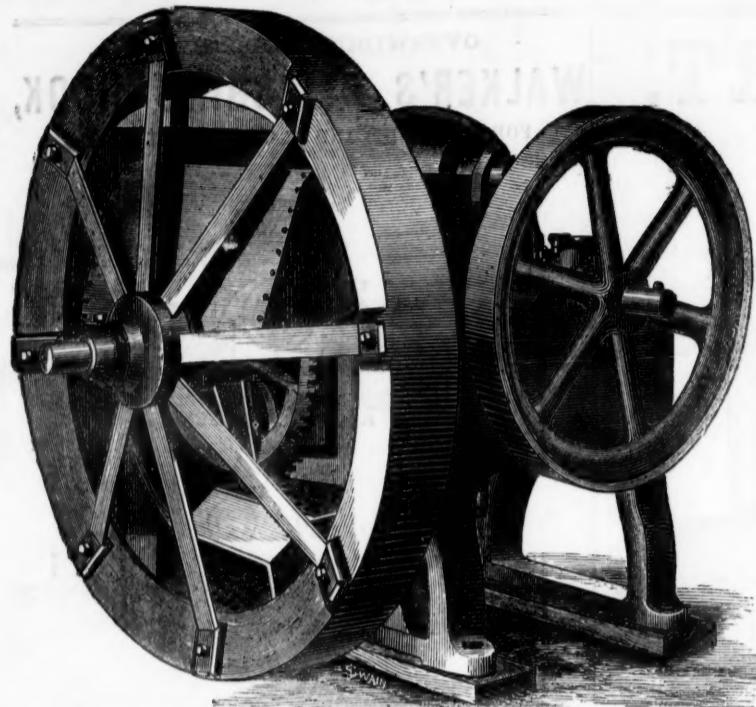
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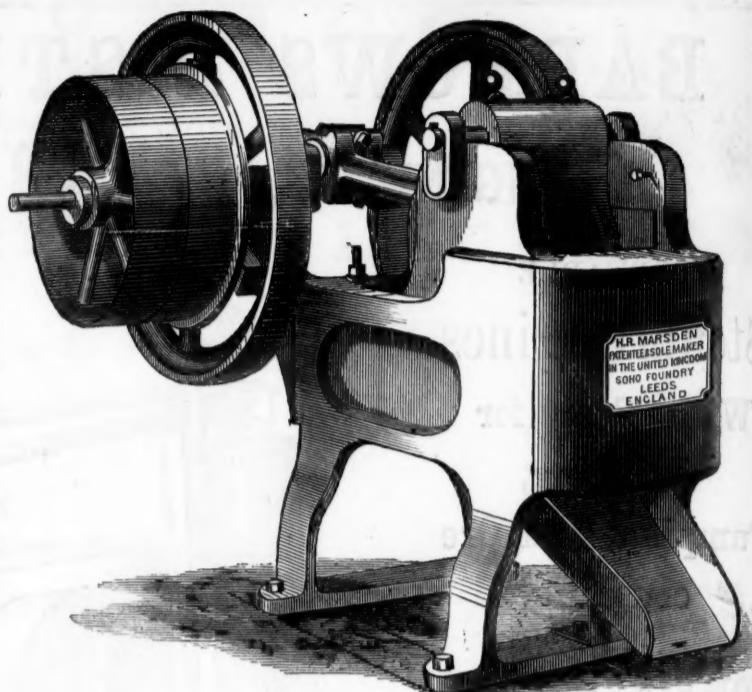
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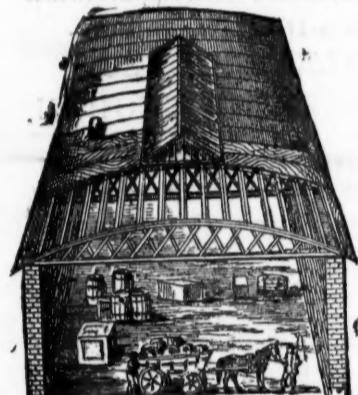
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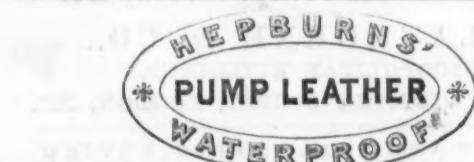
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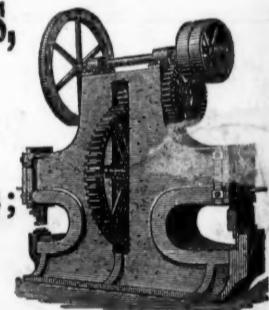
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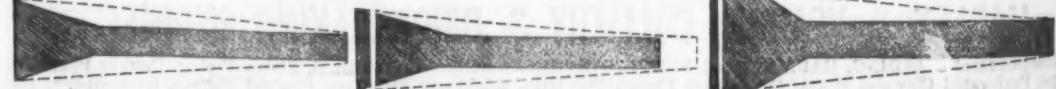
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